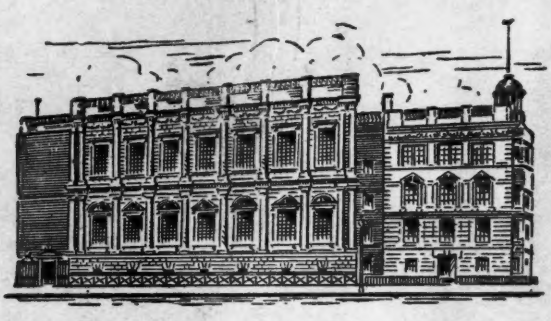
Vol. LXXVII. MAY, 1932 No. 506

# JOURNAL



## Royal United Service Institution

WHITEHALL, LONDON, S.W.1

ALL RIGHTS RESERVED

PUBLISHED QUARTERLY

*Price Seven Shillings and Sixpence*

Sole Advertising Contractors:
S. Watkinson, Ltd., 115, High Holborn, W.C.1. Telephone: Chancery 8752.

*By appointment to H.M. the King.*

# Appropriate Presents

You will find at 112 Regent Street what is without doubt the most interesting and complete collection of Badge Jewellery to be found anywhere. If you are unable to call may we send a brooch for your inspection, at our own risk.



**ROYAL AIR FORCE**
Rose Diamond Brooch ... ... **£27 10 0**
In 15-ct. Gold and Enamel, from **£4 7 6**



**NAVAL CROWN**
Diamond & Rose Diamond Brooch ... ... **£36 10 0**
Other sizes in Rose Diamonds, from ... **£5 17 6** upwards



**ROYAL MARINES**
Rose Diamond Brooch **£33 15 0**
In Platinum, 18-ct. Gold and Enamel ... ... **£8 7 6**



**ROYAL ENGINEERS**
Rose Diamond Brooch **£27 10 0**
In 18-ct. Gold & Enamel, from ... ... ... **£3 15 0**




**STERLING SILVER VANITY CASE** (diameter 2 inches) with the lid enamelled in the Colours and mounted with Sterling Silver Badge of any unit ... **£2 5 0**



**ROYAL ARMY SERVICE CORPS**
Rose Diamond Brooch **£35 0 0**
In 18-ct. Gold & Enamel **£7 12 6**




**ROYAL ARTILLERY**
Rose Diamond Brooch **£24 0 0**
In 18-ct. Gold & Enamel **£4 0 0**

*Write for an Illustrated Gifts Brochure*

# THE GOLDSMITHS & SILVERSMITHS COMPANY LTD.

112, REGENT STREET, LONDON, W.1

*(At the corner of Glasshouse Street).*

# Of interest to Staff College Candidates

*"Your Course for the Staff College Examination is exceedingly well arranged, and no trouble is spared to meet individual needs. The instruction provided was of a very high order. I consider that the full Course or any part of it provides very high value at very moderate cost, and is far superior to any other method of preparation."* (From an officer who succeeded in gaining admission to the Staff College at the 1931 Examination).

UP-TO-DATE POSTAL INSTRUCTION FOR STAFF COLLEGE ENTRANCE EXAMINATION
*(All obligatory and several optional subjects)*
PROMOTION EXAMINATION
*(all subjects) is provided by*

Principal: R. W. HOLLAND O.B.E., M.A., M.Sc., LL.D.

PITMAN'S CORRESPONDENCE COLLEGE
293 SOUTHAMPTON ROW, LONDON, W.C.1

Prospectus on application


## CONTENTS FOR MAY, 1932.


| | PAGE |
|---|---|
| SECRETARY'S NOTES .. .. .. .. .. .. .. .. | ix. |
| FRONTISPIECE: NELSON'S "GOLDEN MOMENT" .. .. .. .. | — |
| THE GOLDEN MOMENT. By REAR-ADMIRAL W. M. JAMES, C.B. .. .. | 235 |
| THE STUDY OF WAR BY JUNIOR OFFICERS. (*Lecture*). By MAJOR J. K. McNAIR, R.A. .. .. .. .. .. .. .. .. | 244 |
| TECHNICAL EDUCATION IN THE ARMY. By CAPTAIN H. J. COOPER, R.A.S.C. | 260 |
| NAVAL DISCIPLINE. By PAYMASTER-CAPTAIN H. P. MURRAY, D.S.O., R.N. | 265 |
| A FLIGHT TO ABYSSINIA. (*Lecture*). By SQUADRON-LEADER J. L. VACHELL, M.C., R.A.F. .. .. .. .. .. .. .. | 269 |
| TANKS AND INFANTRY IN THE ATTACK IN MOBILE WARFARE. By "FORWARD" .. .. .. .. .. .. .. .. | 282 |
| A TANK OF THE FUTURE: THE ULTRA BULLET AND ITS POTENTIAL EFFECTS. By "L.V.S.B." .. .. .. .. .. .. .. .. | 293 |
| BROADER ASPECTS OF NAVAL STRATEGY: SOME FRENCH VIEWS. By CAPTAIN G. P. THOMSON, O.B.E., R.N. .. .. .. .. .. | 297 |
| THE DEFENCE OF THE SUEZ CANAL. By LIEUTENANT-COLONEL A. BAIRD SMITH, D.S.O. (Retd.) .. .. .. .. .. .. .. | 308 |
| AIRCRAFT ATTACKS ON WARSHIPS: AN HISTORICAL SUMMARY. By MAJOR OLIVER STEWART, M.C., A.F.C. .. .. .. .. .. .. | 314 |
| FLYING BOATS AND THE WAR AT SEA. By 'ZETES' .. .. .. | 323 |
| THE ROYAL AIR FORCE SECTION OF THE MUSEUM .. .. .. .. | 327 |
| PLATE 1. SOME MODELS PRESENTED BY THE AIRCRAFT MANUFACTURERS .. .. .. .. .. .. | *facing page* 328 |
| PLATE 2. A MODERN ANTI-AIRCRAFT EQUIPMENT | *facing page* 329 |


*Continued on page 3.*


"Luvisca" REG'D SHIRTS
SOFT COLLARS & PYJAMAS
For Comfort Both Day & Night!

COURTAULDS FABRIC

Sold by Leading Hosiers, Outfitters and Stores. Look for the Registered Tab.

If any difficulty in obtaining, write Courtaulds Ltd. (Dept. 276M), 16, St. Martin's-le-Grand, London, E.C.1, who will send you name of nearest retailer and descriptive literature.

BRITISH MANUFACTURE.

# VICKERS-ARMSTRONGS
LIMITED

## ARMAMENTS
OF EVERY
DESCRIPTION.



**VICKERS-ARMSTRONGS**
**105 mm. FIELD HOWITZER**
**ON TRANSPORTABLE**
**FIRING PLATFORM.**

| | |
|---|---|
| Weight of equipment in action | 43 cwts. 1 qr. 0 lbs. (2,197 kgs.) |
| Muzzle velocity - | 2,000–1,510–722 f.s. |
| " " - | 610–460–220 m.s. |
| Weight of projectile | 33.07 lbs. |
| " " | 15 kgs. |
| Maximum range with supercharge | 14,400 yds. |
| | 13,200 m. |

*Head Office:*

**VICKERS HOUSE, BROADWAY,**
**LONDON, S.W.1**

# CRYPTOGRAPHY

**A Study of Secret Methods of Writing by ANDRE LANGIE. 9/- net**

Nature—"This book . . . . will be welcomed by all who wish to make a serious study of the subject, either for practical purposes or as an intellectual exercise."

**CONSTABLE & CO., 10, Orange Street, London, W.C.2**


## CONTENTS—continued from page 1.


| | PAGE |
|---|---|
| ANTI-AIRCRAFT GUNNERY:— | |
| I. By A PILOT | 329 |
| II. By A GUNNER | 336 |
| NEW AIDS TO NAVIGATION AND PILOTAGE. (*Lecture*). By CAPTAIN K. E. L. CREIGHTON, M.V.O., R.N. | 341 |
| THE MAINTENANCE OF MECHANIZED FORMATIONS. By LIEUTENANT-COLONEL E. R. MACPHERSON, O.B.E., F.R.G.S., R.A.O.C. | 359 |
| INFANTRY REORGANIZATION. By MAJOR R. F. W. ASHWORTH | 364 |
| THE BRITISH NAVY IN SOUTH AFRICA. By W. L. SPEIGHT | 373 |
| THE PROBLEM OF THE LIGHT AUTOMATIC GUN. By CAPTAIN G. M. GAMBLE, The Sherwood Foresters | 378 |
| THE SINGLE-SEATER FIGHTER TACTICAL UNIT FOR HOME DEFENCE. By SQUADRON-LEADER J. O. ANDREWS, D.S.O., M.C., *p.s.a.* | 382 |
| THE INTERNATIONAL SITUATION:— | |
| THE DISARMAMENT CONFERENCE | 385 |
| THE FIGHTING AT SHANGHAI | 391 |
| THE LEAGUE OF NATIONS AND THE SINO-JAPANESE CONFLICT | 395 |
| SHAIKH AHMED OF BARZAN AND THE IRAQI GOVERNMENT. By LIEUTENANT H. M. CURTEIS, M.C., Highland Light Infantry | 398 |
| IRAQ AND THE LEAGUE OF NATIONS | 402 |
| CORRESPONDENCE | 404 |
| GENERAL SERVICE NOTES | 410 |
| NAVY NOTES | 412 |
| ARMY NOTES | 424 |
| AIR NOTES | 436 |
| AIRSHIP NOTES | 448 |
| REVIEWS OF BOOKS | 450 |
| ADDITIONS TO THE LIBRARY | 459 |
| REPORT OF THE ANNUAL GENERAL MEETING | 461 |



# PROMOTION EXAMINATIONS

Since 1922 only one failure in Examination at first attempt, and three failures in one sub-head. Some candidates averaged 80–100 per cent. in various sub-heads.

**ENTRANCE INTO REGULAR ARMY FROM SUPPLEMENTARY RESERVE AND TERRITORIAL ARMY**

All candidates passed at first attempt. Several second on the list including 99½ per cent. for Imperial Military Geography.

**Lieutenant-Colonel T. MACGREGOR GREER, 112, Argyle Road, W.13**

# DR. BARNARDO'S HOMES:

NATIONAL INCORPORATED ASSOCIATION



*Barnardo Boys baking bread for the World's Largest Family. 1,600 loaves are baked every day, but this is only sufficient for less than half the family of 8,200 children.*

## Turning C.3 children into A.1 citizens.

**Dr. Barnardo's Homes rescue the nation's orphan and destitute children from conditions which would inevitably drag them down, and give them a new environment, train and place them out in life as useful and industrious men and women.**

**WILL YOU SEND A GIFT OF 10/- TO HELP BARNARDO'S CARRY ON THEIR WORK.**

Cheques and Orders payable "Dr. Barnardo's Homes Food Fund" and crossed, may be sent to Dr. Barnardo's Homes, 148 Barnardo House, Stepney Causeway, London, E.1.

## CHARTER:

**"No Destitute Child Ever Refused Admission."**

**No red tape.**
**No Waiting List.**
**No votes required.**



**Once destitute, Barnardo's are giving him a chance in life.**

---

*A Great Work with a Great Object.*

**THE**

# SHAFTESBURY HOMES

**AND**

# 'ARETHUSA' TRAINING SHIP

(*Founded* 1843)

**10,000 Boys have been sent to the Royal Navy and Mercantile Marine. Eight old "Arethusa" boys were in H.M.S. "Vindictive" in the attack on Zeebrugge on St. George's Day, 1918. One received the V.C. and the others received the D.S.M.**

**1,100 *Children are always being maintained.***

**FUNDS URGENTLY NEEDED**

to prevent curtailment of any Branch of the Society's Work.

*Training Ship 'Arethusa.'*



*Patrons:* Their Majesties the King and Queen; H.R.H. Princess Mary, Countess of Harewood; Field-Marshal H.R.H. the Duke of Connaught. *President;* H.R.H. the Prince of Wales, K.G. *Chairman and Treasurer;* Francis H. Clayton, Esq. *Deputy Chairman;* Lord Daryngton. *Chairman "Arethusa" Committee;* Howson F. Devitt, Esq. *Secretary;* F. Brian Pelly, A.F.C.

**164 SHAFTESBURY AVENUE, LONDON, W.C.2**

***The Society pleads for Legacies and Bequests.***

---



REMEMBER

**Two Steeples No. 83**

quality when you want a good pair of socks.

FROM ALL HOSIERS

---

**BOOKS**

# Hugh Rees Ltd.

MILITARY AND NAVAL BOOKSELLERS, STATIONERS AND PUBLISHERS.

**5 & 7, REGENT STREET, S.W.1**

**New Publication.**
Notes on Appreciations, Instructions, Operation Orders, and Message Writing, by Major O. G. Body, with 2 Ordnance Maps. **Price 8/6, Postage 6d.**

# PROMOTION & STAFF COLLEGE ENTRANCE EXAMINATIONS

NO matter where you are stationed, the Metropolitan Services College can be of the greatest possible assistance to you in your preparation for the Army Promotion Examinations [Subjects (a), (b), (c) and (d) ] and for the Staff College Entrance Examinations (Camberley & Quetta).

* * *

## 7,868 PASSES and 11 SPECIAL CERTIFICATES

**in the**

**last five years alone**

* * *

## 46 STAFF COLLEGE STUDENTSHIPS IN 1930-31

* * *

*Write TO-DAY for a free copy of the College Latest Prospectus "The Army Promotion and Staff College Entrance Examinations" to Dept. M4,*

**METROPOLITAN SERVICES COLLEGE ST. ALBANS**

## WHEN YOU RETIRE

OF especial value to retired Officers who desire to equip themselves to hold responsible Business, Commercial or Secretarial appointments is an

**INTENSIVE BUSINESS COURSE**

under the guidance of the Metropolitan College.

**INDIVIDUAL ORAL TUITION IN LONDON OR PRACTICAL POSTAL TRAINING**

Officers are invited to write to the College Headquarters (Metropolitan College, Dept. E1, St. Albans) for a copy of the brochure "Intensive Business Training" or to call at the undermentioned address when expert advice and full information will be gladly given.

**METROPOLITAN COLLEGE 40-42 QUEEN VICTORIA ST. LONDON, E.C.4**

*(Associated with the Metropolitan Services College)*

# Carlisle & Gregson

**(Established over 50 Years)**

**5, Lexham Gardens, Kensington, W.8**

**STAFF COLLEGES, PROMOTION,**
**All SERVICES Entrance Examinations**
**:: and UNIVERSITIES. ::**

Telegraphic Address: "Lexjam, Kens, London."
Telephone: Western 1287.

# N. A. A. F. I.

## SERVES THE SERVICES

It belongs to them, is controlled by them, and aims at promoting their interests in every way.

## THERE ARE NO SHAREHOLDERS

and all surplus revenue is returned to the Services in rebate, discount and other schemes for the benefit of the Services.

## THE N.A.A.F.I. SUPPLIES EVERYTHING

*but is strictly limited to dealing with Serving Members of the Regular Forces, their wives and families, and Territorials during Annual Training.*

Headquarter Offices:
IMPERIAL COURT, UPPER KENNINGTON LANE, LONDON, S.E.11

**ROYAL UNITED SERVICE INSTITUTION**
**WHITEHALL, S.W.1**

*Hire of*
## Lecture Theatre

The Institution's Theatre can be let to Service and non-political bodies.

**Service Meetings . . . £2 2 0**
**Non-Service Meet ngs . £4 4 0**
**Alcove for small Meetings £1 1 0**

*Apply to Secretary*

## Royal Soldiers Daughters' Home.



(Founded 1855).
Incorporated 1923

**For the Maintenance, Clothing, and Education of Daughters of Soldiers, whether Orphans or not.**

The children are trained for Domestic Service and in special cases for Trades.

*Patrons:* Their Majesties **The King and Queen.**
*Vice-President & Chairman:* Field-Marshal Viscount Plumer, G.C.B., G.C.M.G., G.C.V.O., G.B.E.

Admission, between the ages of six and eleven years, by approval of the Committee. Age of departure, seventeen, when a situation is guaranteed to them and they are supplied with an outfit.

**GENEROUS GIFTS,** Annual Subscriptions and Donations urgently invited and thankfully received by the Secretary, Major H. S. Marshall, D.S.O., at the Home, 65, Rosslyn Hill, Hampstead, N.W.3, or the Hon. Treasurer, Lloyds Bank, Ltd. (Cox's & King's Branch), 6, Pall Mall, S.W.1.

## THE SOCIETY FOR NAUTICAL RESEARCH

(FOUNDED IN 1910).

*Patron:*
**H.R.H. PRINCE GEORGE, K.G., G.C.V.O**
*President:*
**Admiral of the Fleet EARL BEATTY, P.C., G.C.B., O.M., G.C.V.O., D.S.O., D.C.L.(Oxon.), LL.D.**

**THE OBJECTS OF THE SOCIETY:**

(1) To encourage the study of nautical and naval antiquities; including the dress and equipment of seamen in all ages and races, and the build of ships, both men-of-war and merchantmen.

(2) To compile a reliable Sea Dictionary or Sailor's Word-Book, and, with that end in view, to collect information which will explain obscure words and phrases, together with the customs, usages and folk-lore that gave rise to them.

(3) To pave the way to the establishment of a National Maritime Museum, such as those which already exist in countries less renowned than Britain for connection with the sea.

The Society has raised £100,000 to save Nelson's Flagship and has undertaken to restore H.M.S. *Victory* to the exact appearance which she wore at Trafalgar.

The Society issues once a quarter an illustrated journal of one hundred pages devoted to the study of nautical archæology in all its branches.

The subscription of *One Guinea* entitles all who join the Society to one copy of all its Reports and quarterly journals.

For particulars of membership apply to the Honorary Secretary,
PROFESSOR GEOFFREY CALLENDER, F.S.A.,
R.N. College, Greenwich.

# PALL MALL DEPOSIT

AND FORWARDING CO. LTD.

**Carlton Street, Lower Regent Street**

(FIFTY YARDS FROM PICCADILLY CIRCUS, S.W. 1)

*Telephone : WHITEHALL 4545 (Four lines)* *Cables : BURNISHED, LONDON*

## BAGGAGE STORED

*In the centre of West End, near all the Service Clubs and principal Hotels*

Access to baggage available during office hours without notice. Accommodation for unpacking and repacking kit free of charge.

*REDUCED RATES FOR MEMBERS OF H.M. SERVICES*




*for the pipe that is perfect*

# PLAYER'S

**NAVY MIXTURE OR NAVY CUT TOBACCO**

# JOURNAL

of the

# Royal United Service Institution

*Published by Authority of the Council.*




Postal Address: Whitehall, London, S.W.1
Telephone No. Whitehall 5854.
Telegraphic Address: "Russatus, Parl, London."

Vol. LXXVII. MAY, 1932. No. 506.

Sole Advertising Contractors:
S. WATKINSON, LTD., 115, High Holborn, W.C. 1. Telephone: Chancery 8752

# ROYAL UNITED SERVICE INSTITUTION

FOR

"THE PROMOTION AND ADVANCEMENT OF NAVAL AND MILITARY SCIENCE AND LITERATURE." *Royal Charter, 22nd February, 1860 (23 Vict.).*

**PATRON:**

H.M. KING GEORGE V.

**VICE-PATRON**

H.R.H. The PRINCE OF WALES, K.G., K.T., K.P., G.C.S.I., G.C.M.G., G.C.I.E., G.C.V.O., G.B.E., M.C.

**PRESIDENT:**

Field-Marshal H.R.H. The DUKE OF CONNAUGHT, K.G., K.T., K.P., G.C.B., G.C.S.I., G.C.M.G., G.C.I.E., G.C.V.O., G.B.E., V.D.

**VICE-PRESIDENTS**

Field-Marshal The *Viscount* ALLENBY, G.C.B., G.C.M.G., D.C.L., LL.D.

General The *Viscount* BYNG, G.C.B., G.C.M.G., M.V.O., LL.D.

Admiral of the Fleet The *Earl* JELLICOE, G.C.B., O.M., G.C.V.O., LL.D.

Lieut.-Colonel *Sir* ARTHUR LEETHAM, Kt., K.C.V.O., C.M.G., F.S.A.

Field-Marshal *Sir* W. R. ROBERTSON, Bart., G.C.B., G.C.M.G., G.C.V.O., D.S.O., D.C.L., LL.D.

Marshal of the Royal Air Force *Lord* TRENCHARD, G.C.B., D.S.O., D.C.L., LL.D. (*Vice-Chairman of the Council*)

Admiral *Sir* R. G. O. TUPPER, G.B.E., K.C.B., C.V.O.

**ELECTED MEMBERS OF COUNCIL:**

**Royal Navy.**

Rear-Admiral B. W. M. FAIRBAIRN, O.B.E.

Admiral *Sir* GEORGE P. W. HOPE, K.C.B., K.C.M.G.

Admiral of the Fleet *Sir* ROGER J. B. KEYES, BT., G.C.B., K.C.V.O., C.M.G., D.S.O., LL.D., D.C.L., (*Chairman of the Council*).

Rear-Admiral C. J. C. LITTLE, C.B.

**Royal Marines.**

Colonel W. W. GODFREY, C.B., C.M.G. R.M.

**Royal Naval Reserve.**

Captain *Sir* D. WILSON-BARKER, Kt., R.D., R.N.R.

**Royal Naval Volunteer Reserve.**

Captain The *Earl* HOWE, C.B.E., V.D., R.N.V.R.

**Regular Army.**

General *Sir* J. F. NOEL BIRCH, G.B.E., K.C.B., K.C.M.G.

Lieut.-General *Sir* J. R. E. CHARLES, K.C.B., C.M.G., D.S.O.

Colonel C. H. COLVIN, C.B., D.S.O.

Major-General B. D. FISHER, C.B., C.M.G., D.S.O.

General *Sir* A. A. MONTGOMERY-MASSINGBERD, K.C.B., K.C.M.G.

Lieut.-Colonel G. E. C. RASCH, D.S.O.

General *Sir* ROBERT WHIGHAM, G.C.B., K.C.M.G., D.S.O.

**Militia.**

Colonel *Lord* AMPTHILL, G.C.S.I., G.C.I.E.

**Territorial Army.**

Colonel J. JOSSELYN, C.M.G., D.S.O., O.B.E., T.D.
Brig.-General *The Earl of* LUCAN, K.B.E., C.B., T.D.
Colonel F. D. SAMUEL, D.S.O., T.D.
Colonel B. ABEL SMITH, D.S.O., M.C., T.D., A.D.C.

**Indian Army.**

Field-Marshal *Sir* CLAUD W. JACOB, G.C.B., G.C.S.I., K.C.M.G.

**Royal Air Force.**

Air Vice-Marshal *Sir* VYELL VYVYAN, K.C.B., D.S.O.

## REPRESENTATIVE MEMBERS.

ADMIRALTY.

*Director of Naval Intelligence :* Rear-Admiral C. V. USBORNE, C.B., C.M.G.

WAR OFFICE.

*Director of Staff Duties :* Major-General *Sir* IVO L. B. VESEY, K.B.E., C.B., C.M.G., D.S.O.

AIR MINISTRY.

*Air Officer Commanding-in-Chief, Air Defence of Great Britain :* Air Marshal *Sir* E. L. ELLINGTON, K.C.B., C.M.G., C.B.E.

## EX-OFFICIO MEMBERS.

*First Sea Lord :* Admiral *Sir* FREDERICK L. FIELD, G.C.B., K.C.M.G.
*Chief of the Imperial General Staff :* Field-Marshal *Sir* GEORGE F. MILNE, G.C.B., G.C.M.G., D.S.O.
*Chief of the Air Staff :* Air Chief-Marshal *Sir* JOHN M. SALMOND, G.C.B., C.M.G., C.V.O., D.S.O., A.D.C.
*Director-General of the Territorial Army :* General *Sir* WILLIAM THWAITES, K.C.B., K.C.M.G.
*President of the Royal Naval College, Greenwich:* Vice-Admiral *Sir* W. H. D. BOYLE, K.C.B.
*Commandant of the Imperial Defence College :* Air Marshal *Sir* ROBERT BROOKE-POPHAM, K.C.B., C.M.G., D.S.O., A.F.C.
*Director of the Royal Naval Staff College :* Captain T. F. P. CALVERT, D.S.O., R.N.
*Commandant of the Staff College, Camberley :* Major-General J. G. DILL, C.B., C.M.G., D.S.O.
*Commandant of the R.A.F. Staff College, Andover :* Air Commodore P. B. JOUBERT DE LA FERTÉ, C.M.G., D.S.O.

## HONORARY MEMBERS OF THE COUNCIL.

General *Sir* A. W. CURRIE, G.C.M.G., K.C.B. (Canada).
General *Sir* HENRY G. CHAUVEL, G.C.M.G. K.C.B.
Major-General *Sir* A. H. RUSSELL, K.C.B., K.C.M.G. (New Zealand).
General *The Right Hon.* J. C. SMUTS, P.C., C.H. (South Africa).
Lieut.-General H.H. THE MAHARAJAH OF BIKANER, G.C.S.I., G.C.I.E., G.C.V.O., G.B.E., K.C.B. (India).

## STAFF

*Secretary, Editor and Chief Executive Officer :* Captain E. ALTHAM, C.B., R.N.
*Librarian and Curator :* Colonel E. L. HUGHES, D.S.O., O.B.E.
*Assistant Editor :* Lieut.-Colonel H. G. de WATTEVILLE, C.B.E., late R.A.
*Assistant Executive Officer :* Captain S. J. PARKER, M.C., D.C.M.

*Auditors :* MESSRS. BARTON, MAYHEW & Co.
Alderman's House, Bishopsgate, E.C.2.

*Bankers:* ROYAL BANK OF SCOTLAND, DRUMMOND'S BRANCH,
Charing Cross, S.W.1.

## MEMBERSHIP

Full particulars of Membership with alternative forms for Bankers' Orders can be obtained on application to " The Secretary, Royal United Service Institution, Whitehall, London, S.W.1."

Commissioned Officers of *all* H.M. fighting Services, including those of the Dominions, Colonies and India, and Midshipmen of the Royal Navy, Royal Naval Reserve and Royal Naval Volunteer Reserve, are eligible for membership without proposal or ballot.

Naval, Military and Air Force Cadets are eligible on the recommendation of their Commanding Officers.

An Officers' Mess may subscribe to the JOURNAL, but is *not* eligible for membership.

## TERMS OF SUBSCRIPTION.

ANNUAL MEMBERS—Payable on 1st January each year, £1 5s 0d.

NOTE.—The Entrance Fee is suspended until 31st December 1932; after which date it will be £1 1s. 0d.

LIFE MEMBERS.

(*a*) £20 0s. 0d., payable in one sum or :

(*b*) £21 0s. 0d., payable in four instalments of Five Guineas, the first on joining, the others on 1st January of each succeeding year.

The above rates of subscription entitle Members to the loan of four volumes at a time from the Library, provided they are at Home or at those stations abroad where arrangements exist for forwarding books.

It is important that Officers joining should furnish full and clear particulars of their Name, Rank, Ship, Regiment or R.A.F. Squadron, etc., and the address to which they wish their JOURNALS sent.

Officers of the Indian, Dominion and Colonial Naval, Military and Air Forces temporarily in the United Kingdom may become members for a period of six months on payment of Ten Shillings and Sixpence, or One Guinea for twelve months.

SPECIAL FACILITIES FOR JUNIOR OFFICERS.—Officers of less than three years seniority in commissioned rank, Midshipmen R.N., R.N.R., R.N.V.R,, and Naval, Military and Air Force Cadets are not required to pay the Entrance Fee, but their membership will date from 1st January.

## THE INSTITUTION.

The Royal United Service Institution is situated just below the War Office in Whitehall. It has the best professional Library in the United Kingdom; a Lecture Theatre where an autumn and winter session of lectures is devoted to subjects of current or historical Service interest. The Reading and Smoking Rooms are provided with the leading papers, periodicals and writing materials.

The Institution is open daily from 10 a.m. to 7 p.m., except Sunday, Christmas Day and Good Friday.

## THE JOURNAL.

The R.U.S.I. JOURNAL is published quarterly and sent post free to Members in any part of the world.

## THE MUSEUM.

Situated in the Banqueting Hall of the old Palace of Whitehall (1622), with its magnificent Rubens ceiling, the R.U.S. Museum is a treasure house of relics and mementoes of great victories and renowned warriors. There is also a most valuable collection of Uniforms, Medals, Ship Models, and models of the battles of Trafalgar and Waterloo.

For Members and their friends, there are private entrances to the Museum from the Institution.

H.M. Forces in uniform are admitted free at the public entrance.

Admission to the general public is 1s.; Saturday after Noon, 6d.

# SECRETARY'S NOTES

*May*, 1932.

## Royal Visit.

His Royal Highness the Prince of Wales honoured the Institution with a visit on 10th March. He was shown round the Museum by Admiral of the Fleet Sir Roger Keyes, Bt., G.C.B., K.C.V.O., C.M.G., D.S.O., the Chairman of the Council, and Captain E. Altham, C.B., R.N., the Secretary and Chief Executive Officer. He was accompanied by Sir Maurice Jenks the Lord Mayor of London, who had been attending a meeting of the Royal Naval Fund held in the Institution, and presided over by His Royal Highness.

## Chairman of the Council.

Admiral of the Fleet Sir Roger J. B. Keyes, Bart., G.C.B., K.C.V.O., C.M.G., D.S.O., has been elected Chairman of the Council for the year 1932-1933. Marshal of the Royal Air Force, Lord Trenchard, G.C.B., D.S.O., D.C.L., LL.D., has been elected Vice-Chairman of the Council for the year 1932-1933.

## Council.

At the Annual General Meeting the following were unanimously elected to fill the vacancies on the Council :—

ROYAL MARINES.

Colonel W. W. Godfrey, C.M.G., R.M.

ROYAL NAVAL VOLUNTEER RESERVE.

Captain The Earl Howe, C.B.E., V.D., R.N.V.R.

REGULAR ARMY.

General Sir Robert Whigham, G.C.B., K.C.M.G., D.S.O.

TERRITORIAL ARMY.

Colonel B. Abel Smith, D.S.O., M.C., T.D., A.D.C.
Colonel F. D. Samuel, D.S.O., T.D.

Since then, Rear-Admiral B. W. M. Fairbairn, O.B.E., has been elected as a Royal Navy representative in the vacancy caused by the resignation of Rear-Admiral The Hon. R. A. R. Plunkett-Ernle-Earle-Drax, C.B., D.S.O., on his appointment as Commander-in-Chief, America and West Indies Station. Lieutenant-Colonel G. E. C. Rasch, D.S.O., has been elected as a Regular Army representative in the vacancy caused by the resignation of Colonel A. F. A. N. Thorne, C.M.G., D.S.O., on taking up the appointment of British Military Attaché in Berlin.

## Australian Representative.

General Sir Henry G. Chauvel, G.C.M.G., K.C.B., has been elected the Honorary Member of the Council representing Australia, in succession to the late Lieut.-General Sir J. Monash, K.C.B., V.D.

## Council Committee.

Group Captain A. A. Walser, M.C., D.F.C., *p.s.a.*, has been elected by the Council as the Royal Air Force representative on the JOURNAL and Library Committee.

## Suspension of Entrance Fee.

The Special attention of Members is called to the fact that at the Annual General Meeting a resolution was passed suspending the entrance fee until 31st December, 1932. They are particularly requested to bring to the notice of potential members the fact that they can now join the Institution for a first annual payment of £1 5s. od. only, and that for officers whose names appear on the current official lists, there is no other formality than to notify the Secretary that they desire to join.

As from the 1st January, 1933, the entrance fee will be £1 1s. od., except for officers of less than three years commissioned service.

## New Members.

The following Officers joined the Institution during the months of February, March and April :—

ROYAL NAVY.

Midshipman R. W. Hughes, R.N.
Sub-Lieutenant W. E. Waters, R.N.
Acting Sub-Lieutenant R. S. Bostock, R.N.
Commander C. B. Turner, R.N.
Lieutenant C. D. H. Briggs, R.N.
Engineer Captain H. R. Teed, R.N.
Lieutenant A. F. Matheson, R.N.
Lieutenant E. W. Monckton, R.N.
Captain R. W. Blacklock, D.S.C., R.N.
Captain J. G. Crace, R.N.
Captain Sir Lionel A. D. Sturdee, Bart., R.N.
Commander W. C. Castle, R.N.
Commander P. W. B. Brooking, R.N.
Lieutenant-Commander D. A. Stride, R.N.
Lieutenant R. S. Palairet, R.N.
Lieutenant H. G. Dymott, R.N.
Vice-Admiral W. Munro Kerr, C.B., C.B.E.
Lieutenant-Commander A. C. Chapman, R.N.
Lieutenant A. J. Debenham, R.N.
Lieutenant G. P. Codrington Ball, R.N.
Lieutenant E. Tyndale Cooper, R.N.
Commander B. R. Willett, D.S.C., R.N.
Captain F. G. C. Langdon, R.N.
Lieutenant R. P. Lonsdale, R.N.
Captain G. H. Creswell, D.S.C., R.N.
Paymaster Commander R. E. Worthington, D.S.C., R.N.

Commander F. A. Conyers Baker, R.N.
Commander D. P. Cather, R.N.
Lieutenant A. P. Gibson, R.N.
Captain J. W. Clayton, R.N.
Commander R. B. Wilmot-Sitwell, R.N.
Lieutenant G. F. Blaxland, R.N.
Captain L. G. Dawson, R.N.
Commander H. W. V. McCall, R.N.

ARMY.

2nd Lieutenant C. R. N. Bishop, South Staffs Regt., T.A.
2nd Lieutenant J. B. Stewart, 20th London Regt., T.A.
Lieutenant-Colonel T. T. Waddington, M.C., Queen's Own Royal West Kent Regt., T.A.
Captain J. B. Cooper, The Gloucestershire Regt.
2nd Lieutenant D. G. Scourfield-Davies, Welsh Guards.
2nd Lieutenant N. D. Leslie, Q.O. Cameron Highlanders.
2nd Lieutenant J. F. Legard, R.A.
2nd Lieutenant J. E. H. Tollemache, Coldstream Guards.
2nd Lieutenant R. M. Crosthwaite, K.O.S.B.
2nd Lieutenant R. W. Q. Going, K.O.S.B.
2nd Lieutenant J. D. T. R. Sladen, K.O.S.B.
2nd Lieutenant J. S. A'D. Coke, K.O.S.B.
2nd Lieutenant H. Teesdale-Smith, 22nd London Regt., T.A.
2nd Lieutenant A. Macdonald, K.O.S.B.
Captain C. C. Hawkes, late The Royal Sussex Regt.
Lieutenant L. C. M. Nash, R.H.A.
2nd Lieutenant J. E. Gurney, Welsh Guards.
2nd Lieutenant A. J. Lewis, Royal Welch Fusiliers.
Captain H. R. Elliott-Bateman, 1/13th Frontier Force Rifles, I.A.
Lieutenant J. W. H. K. Greenway, 8th Gurkha Rifles, I.A.
Lieutenant S. J. G. Cornall, The Loyal Regt.
Captain F. D. S. Fripp, 2/2nd Punjab Regt., I.A.
Lieutenant E. S. D. Pentreath, D.C.L.I.
Lieutenant-Colonel G. R. Hopkins, O.B.E., R.A.O.C.
Captain J. R. Kennedy, M.C., R.A. (Retired).
Colonel J. L. Sleeman, C.M.G. C.B.E., M.V.O., Commanding 165 (South Wales) Brigade, T.A.
Lieutenant S. R. Hunt, North Staffordshire Regt.
Captain J. Cave-Bigley, R.A.
Brigadier A. J. McCullock, D.S.O., D.C.M., A.D.C., Commandant, Senior Officer's School, Sheerness.
Captain G. W. O'Brien, M.C., The Border Regt.
Captain S. J. Parker, M.C., D.C.M., late Royal Welch Fusiliers.
Captain E. V. Raikes, late The Cheshire Regt.
Captain R. E. Harbord, Territorial Reserve of Officers.
2nd Lieutenant H. C. B. Cook, South Staffordshire Regt.
Lieutenant-Colonel R. P. Pakenham-Walsh, M.C., R.E.
Brigadier-General A. E. W. Colville, C.B., late Rifle Brigade.
Lieutenant-Colonel H. W. V. Stewart, D.S.O., Seaforth Highlanders.
Major C. W. Sanders, 2nd Bn. 1st Punjab Regt., I.A.

Major H. B. Latham, R.A.
Captain A. N. Overell, The Middlesex Regt.
Lieutenant T. H. Ely, K.S.L.I.
Lieutenant-Colonel L. M. Colman, T.D., 57th (H.C.) Field Bde., R.A., T.A.
Lieutenant-Colonel C. G. A. Cooper, D.S.O., R.A.
Lieutenant C. E. H. Dolphin, The Lincolnshire Regt.
Captain J. G. Mackellar, Argyll and Sutherland Highlanders.
Lieutenant-Colonel G. M. Spencer-Smith, D.S.O., R.H.A.
Major L. V. S. Blacker, O.B.E., I.A.
Lieutenant-Colonel G. H. Birkett, D.S.O., South Wales Borderers.
2nd Lieutenant C. Tyrwhitt, Worcestershire Regt.
Lieutenant-Colonel A. N. E. Browne, late H.L.I.
Lieutenant L. H. Spicer, East Yorkshire Regt.
Captain W. H. Bateman, M.C., A.M., 42nd Div., R.E. (Reserve).
Captain J. H. Boyd, R.E.
Lieutenant J. J. S. Dudgeon, Queen's Own Cameron Highlanders.
Lieutenant M. A. A. Little, 9th Lancers.
Lieutenant L. H. Bean, Somerset Light Infantry.
Captain C. A. Osborne, 2/11th Sikh Regt., I.A.
Lieutenant H. W. T. Marden, M.B.E., Dorsetshire Regt.
Captain N. R. Upton, M.B.E., Essex Regt.
Captain J. A. M. Ellison-Macartney, Queen Victoria's Rifles (9th London), T.A.
Captain S. D. Hayward, Royal Tank Corps.
Captain B. W. Richards, T.D., late R.A., T.A.
Lieutenant C. H. S. Howkins, Queen Victoria's Rifles (9th London), T.A.
Lieutenant R. E. L. Tuckey, Worcestershire Regt.
Captain F. J. Trumper, 4th Bn. Dorsetshire Regt., T.A.
Captain C. F. G. Crawford, late Worcestershire Regt.
Captain W. A. D. Drummond, R.A.M.C.
Captain W. D. J. Harries, Royal Signals.
Captain A. J. Sullivan, Queen's Royal Regt.
Captain C. B. Barlow, 12th F.F. Regt. (Sikhs), I.A.
Major J. A. Langman, R.E.
Lieutenant-Colonel M. Cuthbertson, M.C., 19th London Regt., T.A.
Captain C. E. S. Dobbs, M.C., R.A.S.C.
2nd Lieutenant J. d'Henin Hamilton, Coldstream Guards.
Lieutenant T. W. Gimson, North Staffordshire Regt.
Captain J. W. Bingham, Royal Tank Corps.
Captain G. C. Fawns, R.A.
Captain H. B. Finch, M.C., A.M.I.N.E., R.A.S.C.
Captain D. H. J. Williams, 13th F.F. Rifles, I.A.
Lieutenant-Colonel N. R. Campbell, M.C., T.D., 5th Bn. H.L.I., T.A.
Captain L. K. Lockhart, M.B.E., M.C.
Lieutenant-Colonel G. J. P. St. Clair, R.A.
Captain E. J. E. Strong, R.A.
Captain J. H. Brown, Durham Light Infantry.
Captain R. J. G. Temple, R.A.
Captain R. A. T. Eve, King's Royal Rifle Corps.
Captain C. R. Johnson, Royal Fusiliers.
Lieutenant G. V. Lardner-Clarke, The King's Regt.

Captain G. R. Jillings, R.A.
Captain F. W. Clowes, Norfolk Regt.
Lieutenant C. A. R. Nevill, Royal Fusiliers.
Lieutenant-Colonel T. C. Newton, D.S.O., O.B.E., R.A.
Lieutenant B. McCall, Royal Fusiliers.
Lieutenant A. F. Somerset, R.A.S.C.
Major A. R. Cross, M.C., 5th Bn., H.L.I., T.A.
Lieutenant-Colonel J. H. Leslie, R.A. (Retired).
Lieutenant A. B. de C. Dickinson, R.A.
2nd Lieutenant D. Morley-Fletcher, London Rifle Brigade, T.A.
2nd Lieutenant J. R. Fishbourne, Northumberland Fusiliers.
Captain E. L'E. Davies, R.A.
Captain J. C. E. Hardin, R.T.C.
Captain S. H. L. Key, The York & Lancaster Regt.
Lieutenant F. R. Marshall, The Norfolk Regt.
Captain R. L. Simpson, 18th K.E.O. Cavalry, I.A.
Captain O. F. M. Tudor, 3rd The King's Own Hussars.
Lieutenant-Colonel F. W. Wilson-Fitzgerald, D.S.O., M.C., 1st Royal Drags.
Captain M. Wykes, M.C., Royal Berkshire Regt.
Lieutenant G. C. Gordon-Lennox, Grenadier Guards.
Lieutenant A. H. G. Wathen, The Duke of Wellington's Regt.
Lieutenant J. S. Garrett, 4th Bn. 8th Punjab Regt., I.A.
Captain A. George, 2nd Bn. 1st Punjab Regt., I.A.
Captain D. C. Hawthorn, 2nd Bn. 1st Punjab Regt., I.A.
Captain J. K. McConnell, 2nd Bn. 1st Punjab Regt., I.A.
Captain J. D. Sainter, M.C., 2nd Bn. 1st Punjab Regiment, I.A.
Lieutenant E. O. Herbert, R.A.
Captain G. S. Renny, South Staffs Regt.
Captain G. F. M. Stray, M.C., 3rd Bn. 14th Punjab Regt., I.A.
Lieutenant R. H. Ballard, R.A.M.C., T.A.

ROYAL AIR FORCE.

Pilot Officer R. Cleland, R.A.F.
Flying Officer A. F. C. Booth, R.A.F.
Air Commodore J. M. Bonham-Carter, C.B.E., O.B.E.
Wing Commander R. M. Hill, M.C., A.F.C., R.A.F.
Group Captain S. Smith, D.S.O., A.F.C., R.A.F.
Group Captain A. A. Walser, M.C., D.F.C., R.A.F.,
Pilot Officer D. C. T. Bennett, R.A.F.
Wing Commander G. W. Murlis Green, D.S.O., M.C., R.A.F.
Squadron Leader L. G. Maxton, A.F.C., R.A.F.
Wing Commander F. H. M. Maynard A.F.C., R.A.F.

## Change of Telephone Number.

The telephone number of the Institution has been changed to Whitehall 5854 (two lines).

## JOURNAL.

### Military Contributions—Commanding Officer's Approval.

Serving officers in the Army must forward the written approval of their Commanding Officer with any articles or letters sent to the Editor for publication in the JOURNAL, as this is now required by the War Office when such contributions are sent there for Official sanction.

### Copies of the Frontispieces.

A limited number of copies of the coloured Frontispieces, published in recent numbers of the JOURNAL, are available for sale and can be supplied, post free, for 6d. each.

## LIBRARY.

### Facilities for Borrowing Books.

The special attention of Members who are paying the comprehensive annual subscription of £1 5s. od., is invited to the fact that they are thereby entitled to the full privileges of the Lending Library without further charge. These include the right to have sent to them not more than four volumes at a time on loan, the Member paying postage both ways.

Old Members who have not wished to conform to the new arrangement and who are still paying the original subscription of £1 1s. od., must pay an additional subscription of 10/- per annum in order to belong to the Lending Library.

All Members are, of course, free to use the Library when they visit the Institution.

### Rules Governing Return of Books.

The attention of Members is invited to the following Regulations governing the retention and return of books :—

(1) Certain books, for which there is a special demand, must not be retained longer than a fortnight after the date of receipt. A notice to this effect will be found in the book.

(2) In the United Kingdom.—Books must normally be returned within one month of the date of issue ; but the Librarian is authorised to make extensions of one month at a time on application by a Member, up to a maximum of three months from the date of issue, if the work is not required by another Member.

(3) All Stations Abroad.—Books must not be retained for more than seven months from the date of issue.

Members are specially requested to conform strictly to these regulations, as failure to do so causes much inconvenience to others and involves the Institution in unnecessary expense and clerical labour.

## MUSEUM.

### Special Exhibition.

The Special Exhibition, consisting of a 40-foot Panorama of ship models depicting the Spanish Armada being attacked by fireships, has proved very popular, and is being retained for the present.

### Royal Air Force Section.

A description of the section of the Museum devoted to Royal Air Force interests, which has lately been formed, will be found on page 327 of this JOURNAL.

### Collection of Medals.

The Institution having had to surrender the Cheylesmore Collection of Medals at the request of the Trustees, the Council are desirous of forming a new collection which will be a permanent feature of the Museum. The Institution already possesses a large and varied collection of medals which are being grouped together, but offers of additions to the collection will be most welcome. Details of such offers should, however, be communicated to the Curator before medals are sent.

### Regimental Badges and Buttons.

It is desired to complete the Institution's collection of Regimental Badges and Buttons, including those of the Regular units, Militia and Volunteers.

Members who can make contributions to the Collection are requested to communicate particulars to the Curator, who will inform them whether the Badges or Buttons offered are already in the Collection.

### Additions.

PERMANENT.

(8442) Full Dress Uniform of the 8th King's Royal Irish Hussars, 1913.—Presented by Mrs. F. H. Deare.

(8443) Badges and Buttons worn by the units of the Australian Imperial Forces, 1914-1918. Presented by R. H. Gray, Esq.

(8444) Cross Bar Pole supporting one of the 15-pounder guns of the 66th Battery, R.F.A.—Presented by Major P. H. Synge.

(8445) Speaking Trumpet and Telescope of Admiral Sir Sydney Smith.—Presented by Canon W. T. R. Crookham.

(8446) Bronze Box in the form of a medal, containing a list of the battles of the Peninsular War.—Presented by Her Majesty Queen Mary.

(8447) Equestrian Statuettes of Lord Clive and Field Marshal Lord Haig.—Executed and presented by Mrs. G. Thomas.

(8448) Officer's Busby and Riflemen's Uniform, Queen's Westminster Rifles; and Full Dress Uniform, The Prince of Wales' Civil Service Rifles.—Presented by the Officers of the Queen's Westminster Civil Service Rifles.

(8449) Badges and Buttons of the 1st Life Guards and of the Shropshire Yeomanry.—Presented by The Marquess of Cambridge.

(8450) Walker Patent "Trident" Electric Log.—Presented by Messrs. T. Walker & Son.

(8451) Full Dress Head-Dress of the 21st Lancers, worn up to 1914, and Sword used by Captain W. H. King, in the charge of the 21st Lancers at Omdurman.—Presented by Captain J. W. D. Thomson.

(8452) Collection of Medals.—Presented by Lieut-Colonel H. F. N. Jourdain, C.M.G.

(8453) Officer's Full Dress Uniform of the Army Motor Reserve.—Presented by Miss C. McEntire.

(8454) Officers' Silver Bonnet Badge, 92nd Gordon Highlanders. Formerly the property of Field Marshal Sir George White, V.C.—Presented by Captain H. N. Edwards.

(8455) Helmet of the 15th Light Dragoons, worn about 1770.—Presented by Major-General D. d'Osnobichine.

(8456) Naval G.S. Medal, awarded to Midshipman E. Boys, R.N.—Presented by Admiral H. Boys.

(8457) Four 2nd India G.S. Medals.—Presented by Captain A. Wilson.

(8458) Collection of fourteen Medals.

(8459) Peninsular and Waterloo Medals, awarded to Lieut. W. Hay, 12th Light Dragoons.—Presented by Mrs. Wood.

(8460) Crimean and Turkish Crimean Medals, awarded to Pte. J. W. O'Brien. —Presented by Corporal J. W. O'Brien.

(8461) Waterloo Medal, awarded to Lieutenant B. B. Hawley, 51st Light Infantry. —Presented by F. Hawley, Esq.

(8462) Peninsular Medal with six Clasps, awarded to Lieutenant A. F. Evans, 60th Foot.—Presented by Major A. Evans, R.M.L.I.

(8463) Collection of Medals.—Presented by Mrs. Duhy.

(8464) Collection of forty-nine Medals, mostly Indian.

(8465) Queen's South African Medal, 1899-1901, awarded to Trooper J. V. McEntire, 19th Imperial Yeomanry.—Presented by Miss C. McEntire.

(8466) Collection of Medals.—Presented by Brigadier General B. M. Bateman, C.M.G.

(8467) Models of the following Vickers' Aircraft: Vildebeeste, Vellore, Victoria, Supermarine, Rolls Royce, S.6 (Schneider Cup winner 1931), and Supermarine "Southampton" Flying Boat.—Presented by Messrs. Vickers (Aviation), Ltd.

(8468) Model of a Blackburn Ripon Aeroplane (1928).—Presented by the Blackburn Aeroplane & Motor Co.

(8469) Model of an Artillery Dragon.—Made and Presented by the Military College of Science, Woolwich.

(8470) Oil Painting of H.M.S. "Liverpool" by Lieutenant Morgan, 1857.— Presented by the Lords Commissioners of the Admiralty.

(8471) Collection of Swords.—Presented by Miss Copland.

(8472) Collection of Swords.—Presented by Lieut.-Colonel A. N. F. Browne.

(8473) Valve Box from S.M.S. "Emden."—Presented by Sub-Lieutenant S. Dolman, R.N.V.R.

LOAN.

(3589) Casket of Soil from the Battlefield of Coruna, which was presented to H.R.H. The Prince of Wales by the Municipality of Coruna.—Deposited by H.R.H. The Prince of Wales.

(3590) Massey Towing Log, patented in 1802.—Deposited by Messrs. T. Walker & Son.

(3591) Gold Replica of the Victoria Cross, presented to Mrs. Webber Harris in 1869, and her miniature.—Deposited by Miss E. M. Matthews.

(3592) Club Badge of the Order of the Blue and Orange, 1727.—Deposited by Mrs. Agg.

## Attendance.

The amount taken for admission during the past quarter was :—

£68 os. 6d. in February.
£161 3s. 6d. in March.
£186 14s. 6d. in April.

## Purchase Fund.

This Fund has been opened to assist in the purchase of new exhibits. The Council hope that it will receive the support of Members interested in the Museum.

# RECIPIENTS OF THE ROYAL UNITED SERVICE INSTITUTION GOLD MEDAL

(With rank of Officers at the date of the Essay).

1874 Captain H. W. L. Hime, R.A.
1875 Commander G. H. U. Noel, R.N.
1876 Lieutenant J. F. G. Ross of Bladensburg, Coldstream Guards.
1877 Captain P. H. Colomb, R.N.
1878 Major T. Fraser, R.E.
Captain E. Clayton, R.A.
1879 Captain The Hon. E. R. Fremantle, C.B., C.M.G., A.D.C., R.N.
1880 Captain J. K. Trotter, R.A.
1881 Captain L. Brine, R.N.
1882 No Medal awarded.
1883 Captain C. Johnstone, R.N.
1884 Captain G. T. Browne, Northamptonshire Regiment.
1885 Lieutenant F. C. D. Sturdee, R.N.
1886 Captain C. E. Callwell, R.A.
1887 No Medal awarded.
1888 Captain J. F. Daniell, R.M.L.I.
1889 Captain H. F. Cleveland, R.N.
1890 Captain G. E. Benson, R.A.
1891 Captain R. W. Craigie, R.N.
1892 Lieut.-Colonel J. Farquharson, C.B., R.E.
1893 Commander F. C. D. Sturdee, R.N.
1894 Major F. B. Elmslie, R.A.
1895 Commander J. Honner, R.N.
1896 Captain G. F. Ellison, Queen's Royal West Surrey Regiment.
1897 Commander G. A. Ballard, R.N.
1898 Captain W. B. Brown, R.E.
1899 Commander G. A. Ballard, R.N.
1900 No Medal awarded.
1901 Lieutenant L. H. Hordern, R.N.
1902 Major A. H. Terry, A.S.C.
1903 Lieutenant A. C. Dewar, R.N.
1904 Lieut.-Colonel C. E. D. Telfer-Smollett, 3rd Bn. South Staffordshire Regiment.
1905 Major W. C. Bridge, South Staffordshire Regiment, *p.s.c.*
1906 Lieutenant B. E. Domvile, R.N.
1907 Lieut.-Colonel A. F. Mockler-Ferryman, Reserve of Officers.
1908 Major A. B. N. Churchill, R.G.A.
1909 No Medal awarded.
1910 Captain P. W. Game, R.H.A.
1911 Captain H. T. Russell, late R.G.A.
1912 Commander K. G. B. Dewar, R.N.
1913 Major A. Lawson, 2nd Drags.
1914–15–16–17 No Medals awarded.
1918 Lieutenant W. S. R. King-Hall, R.N.
1919 Colonel J. F. C. Fuller, D.S.O., Oxford & Bucks L.I.
1920 No Medal awarded.
1921 Flight-Lieutenant C. J. Mackay, M.C., D.F.C., R.A.F.
1922 Major R. Chenevix - Trench, O.B.E., M.C., Royal Corps of Signals.
1923 Captain A. H. Norman, C.M.G., R.N.
1924 Major L. I. Cowper, O.B.E., King's Own Royal Regiment.
1925 Lieut.-Colonel J. C. Dundas, D.S.O., Royal Tank Corps.
1926 No Medal awarded.
1927 Colonel H. Rowan-Robinson, C.M.G., D.S.O., R.A.
1928 No Medal awarded.
1929 Wing-Commander C. J. Mackay, M.C., D.F.C., R.A.F.
1930 Captain D. W. Boileau, R.A.S.C.
1931 Sub-Lieutenant N.Mc I. Kemp, R.N.

GOLD MEDAL ESSAY 1931 (NAVAL)

The Admiralty have been unable to grant permission for the publication of the Essay awarded the Gold Medal for 1931, which would otherwise have been published in this JOURNAL.



*By Thomas Butterworth.*

*From the Painting in the Royal United Service Institution.*

## NELSON'S "GOLDEN MOMENT"

At the Battle of St. Vincent, 1797, Nelson in the "Captain," 74, realizing that contact with the enemy might be lost, broke out of the line and engaged and captured the Spanish flagship "San Josef," 112, and the "San Nicolas," 80. His independence and daring secured a great victory.

# THE JOURNAL
OF THE
# Royal United Service Institution

**Vol. LXXVII. MAY, 1932. No. 506.**


**[Authors alone are responsible for the contents of their respective Papers. All communications (except those for perusal by the Editor only) should be addressed to the Secretary, Royal United Service Institution.]**

## THE GOLDEN MOMENT

By REAR ADMIRAL W. M. JAMES, C.B.

" He who seizes on the moment, that is the right man."
GOETHE.

" There are moments in life worth purchasing with years."
FIELDING.

THE lives of great men provide a study at once fascinating and instructive. In some, it is true, there seem to have been no arresting incidents; rather are they examples of what may be done by laborious effort and steadfast endurance. But in many we see eager youth growing into young manhood which will not be denied and which, seizing the first and every opportunity, finally emerges as a commanding figure on the chosen battlefield, be it political or military. Such careers as these are like some absorbing drama; sometimes the chief episodes may only punctuate the dull periods at long intervals, but often we see that inspiration which is swift to take advantage of the moment, then adventure following on adventure, triumph succeeding triumph, until success in many lesser enterprises is crowned by some great and dramatic victory.

The germs of future greatness can usually be detected in the actions and words of youth, but even so, in the case of most of our greatest naval and military commanders, there appears to have been one particular step which determined not only whether the ascent was to be continued, but also its ultimate destination. As a rule that step was neither at the

top nor at the bottom, but somewhere in the middle of the ladder, and the reason for this is not far to seek. Early revelation of unusual powers of leadership, bravery in the dare-devil spirit of youth, exceptional or precocious professional knowledge, may all predict early fame and ensure early promotion, but in themselves they are no criterion of those greater powers which are called for when making decisions which mean the whole difference between victory and defeat. At such a moment personal bravery and professional knowledge are not enough. The sound judgment which is the product of experience and a well-balanced mind, coupled with the genius of the true leader, swift in thought and determined in action, these are indispensable qualities for a man who may find himself responsible for decisions on which the lives of the many and the fortunes of the state may depend.

To all our great sea leaders, after they had reached responsible command, there came the great, the golden moment when the circumstances of battle offered them the opportunity to show that their earlier achievements were not mere flashes of precocity, but were indeed evidence that a remarkable character was in the process of formation. It is this moment which is of peculiar interest, for it is the rung in the ladder which so many miss, yet it is the step which leads to immortal fame.

Space forbids carrying our enquiry as far back as the age of the Elizabethan giants, but we shall find an ample number of illustrations for this thesis in the lives of the famous XVIIIth century Admirals. To begin with, there is George Anson. Unlike so many of his contemporaries and successors, young Anson was twenty-one years old before he received his baptism of fire at the half-forgotten action off Cape Passaro, when Sir George Byng commanded the British fleet. Then came some years of hard work in various seas; occasionally, perhaps, there were exciting episodes, but we must think of him more often sitting in a lonely cabin of some small 20-gun vessel with none of those things which to-day make life pleasant on board. Then, at last, came his chance.

In 1740, at the age of forty-three, he set out to round Cape Horn and enter the Pacific, where he was to harass the Spaniards and return home by way of China. From the outset the story of this voyage is an epic of tenacity in the face of every sort of adversity. Despite the obvious hazards and hardships which would be involved, his crews were made up of battle-worn Chelsea pensioners and invalids from hospitals; and soon we find his little fleet of five ships suffering from scurvy, storms, and shortage ot food and water. Two of the vessels are unable to beat round the Horn because their men are all sick or dying, another

has been wrecked on Tierra del Fuego, while the flagship has buried 129 of her crew in two months. Yet throughout we are conscious of the indomitable spirit of the leader as he presses ever forward, undaunted, undismayed. At long last, the three remaining ships reach Juan Fernandez. What a sight they must have presented; the storm-scarred "Centurion" with only 200 men alive out of 500, the "Tryad" having buried 34 out of 81, the "Gloucester" with only a third of her crew alive and having taken a month to reach the anchorage after she was first sighted. The obvious thing is to make good defects and sail home; would not ninety-nine men out of a hundred have done so? We must remember, too, that Anson was no harsh martinet, forgetful of the welfare of his men and holding aloof from his subordinates; he personally nursed back to health many of his seamen. But this is his great moment and, undaunted, he makes the great decision to go on. The remainder of the voyage is full of romance; we read of the great galleon captured, of battles with gales, of struggles against disease, but at long last we can picture the little fleet heading proudly up Channel, its mission accomplished.

In later years Anson commanded the British fleet in a successful action off Finisterre, and afterwards he became one of the greatest of our First Sea Lords. But that moment on a Pacific island was the golden moment in his life.

Next, let us turn to Edward Hawke, that arresting figure who used so successfully the instrument fashioned by Anson. Hawke's early career was uneventful, if we can use such a word of life in the old sailing ships. He saw much service on different stations, but it was not until he was a Captain of thirty-six and in command of the "Berwick" that he first saw fighting, and it was then that his moment came.

We were at war with our old antagonists, and the Franco-Spanish fleet lay at Toulon. A British fleet of equal strength, under Mathews, hovered outside. At last the enemy put to sea and there followed the half-forgotten battle of Toulon—wholly forgotten, perhaps, but for the crop of courts-martial that ensued. The two lines were ranged opposite each other, but the British fleet was ill-formed. Mathews, brave, if not great in command, disregarding the hard and fast rules that then governed tactics, decided to attack and run down on the Spanish flagship. One ship only, however, went with him; the remainder of that great fleet did little or nothing to get into action. But one Captain, despising any idea of taking advantage of the Admiral's confused orders, or of quoting the Fighting Instructions as a reason for hanging back, and ignoring the fact that the ships ahead of him were holding on and making no attempt to get in touch with the enemy, gave

the order to put the helm up, and sailed down on the allied fleet, with the result that one ship was beaten out of the line and another captured.

Edward Hawke was the name of that Captain, and this was his great moment. We must remember that the Captains of the ships ahead of him were experienced men, indeed two of them achieved high rank and commanded fleets with distinction at a later period in their careers. How many men, therefore, would have made that sudden decision? From that moment he never looked back. The conscientious, austere, determined man who maintained the great blockade in the Seven Years War; the intrepid leader who crashed into Quiberon Bay after the enemy for whom he had waited and watched for so many weary months; the dominating personality who presided at the Board of Admiralty—such are the more familiar impressions of Edward Hawke; but his golden moment came before these more magnificent and better-known days.

With the name of Hawke we naturally associate that of Edward Boscawen. Boscawen saw some fighting in youth, and distinguished himself in the West Indies, but his moment came when he was Captain of a line-of-battle ship and one of Anson's fleet which met and defeated the French fleet under Monsieur Jonquière. A chase was ordered, and Boscawen took every chance he had. He engaged the first ship he could, then he attacked the flagship, and when she had struck, sailed on and forced yet another to surrender. So brilliant was his individual effort that Walpole wrote: "Anson carried off the glory and the victory, though Boscawen had done the service." Boscawen lived to become a great fleet commander, and to share with Hawke the triumphs of the Seven Years War.

George Bridges Rodney and Charles Saunders were men of widely different character, but their golden moment came in the same battle. Rodney as a young man saw some service in convoy and patrol work, but his real fighting began when he was given his first large command, the 60-gun "Eagle." He was then a Captain of twenty-eight years of age. Saunders had accompanied Anson in his great voyage, but he was thirty-four years of age and Captain of a line-of-battle ship before he saw important fighting.

In 1747 we were at war with the French and these two Captains were serving in Hawke's fleet when it fell in with the French fleet off Finisterre. The French, though weaker, decided to fight. They were overpowered by the broadsides of Hawke's fleet, but two ships, seeing the day was lost, set full sail to escape. Then came the moment for Saunders and Rodney. No signal was made, but entirely on their own responsibility these two crowded on all sail and brought the retreating ships to action.

It should be noted that there were many other Captains of courage, proved ability, and long war service in that fleet, but these two seized the opportunity, and by doing so found the path to future glory. The pages of naval history glow with Rodney's subsequent deeds; the combined operations with Monckton in the West Indies; the great night battle with the Spaniards off Cadiz, when he dared everything for victory; his battles with De Guichen; and the culminating victory of the Saints—these are all great history. Of Saunders it is enough to say that to-day many consider he should share equally with Wolfe the credit for the great strategical and tactical campaign which ended in the capture of Quebec. But despite all these subsequent victories, and all that these two men achieved in administration and battle, their golden moment came when, without signal, they ordered their First Lieutenants to crowd on all sail.

Mention of the battle of the Saints recalls another fine sailor, James Saumarez. He was nineteen when he first saw active service. In the early days of the War of American Independence he greatly distinguished himself in the terrific duel between a British fleet and the forts guarding the entrance to Charleston. He again distinguished himself in the Dogger Bank battle, and at the age of twenty-five found himself a Captain of a ship-of-the-line when Rodney met de Grasse. It was then that Saumarez's moment came, and he did not let it slip.

In the opening phase of the battle of the Saints, the British and French fleets passed each other on opposite tacks, the ships exchanging broadsides. Suddenly, Rodney decided to break through. Saumarez in the "Russell" was in the van, and there came a time when the British van had passed by the French rear. Two of the van ships turned to pursue; Saumarez's ship was one of them. The other ship, however, soon resumed her course, because the Admiral in the van held on and because there was no signal. Not so Saumarez. Ignoring the movements of the other van ships he headed straight into the *mêlée*, and, as a result, got into action with the French flagship, and was in action with her when she surrendered. Rodney, the severest of critics and never prone to lavish praise, declared that Saumarez distinguished himself above all others on that famous day. Saumarez lived to achieve great fame as an Admiral, and to command a fleet in a successful battle during the Napoleonic wars, but his greatest moment was when he disregarded all else and gave orders to port the helm and steer for the enemy.

We come next to those two great figures of the Napoleonic era; Jervis and Nelson.

What a splendid figure and remarkably interesting character was John Jervis, combining as he did an iron exterior and a warm, generous

nature. The latter is revealed to us occasionally in those odd, and often humourous, little stories his Secretary has recorded. He ran away from home to become a sailor, and his early life was one of much privation ; doubtless these early experiences developed his self-reliance and stern determination. He had the good fortune to take part in the Quebec operations in command of a sloop. It was his sloop, the " Porcupine," that embarked Wolfe and led the fleet up the river against the fortifications. The master of the fleet, also on board, was James Cook. Wolfe, Jervis, Cook—together on the poop of that little vessel, all destined to become great historical figures. It was not, however, till some years later that Jervis got his real chance. He was forty-seven years old and in command of the " Foudroyant " of 84 guns when his moment came. After taking a prominent part in the battle of Ushant and in Howe's relief of Gibraltar, the " Foudroyant " joined Barrington's force off Ushant. One day strangers were sighted, a general chase ordered, and Jervis's ship, very much faster than the rest of the fleet, was soon a long way ahead. He found himself far from support and facing six French ships. Shorten sail and wait for his consorts ; that was the obvious thing to do. But no—on, on, he pressed, and as he came closer, he singled out the largest ship and shaped course for her. By midnight he was close enough to open fire and, after fifty minutes cannonading, the Frenchman surrendered.

This splendid example of successful intrepidity was rewarded by knighthood, and from that moment Jervis never looked back. Very soon followed the campaign in the West Indies. Then came those terrible days of mutiny, when that stern, courageous man restored discipline and became an almost deific figure to his contemporaries. Eventually the battle which gave him his title, and Nelson his moment, crowned his record as a great sea commander. Lastly we read of those years of invaluable work as First Lord of the Admiralty. But his golden moment was when he crowded on sail, and, unsupported, pressed forward into the night, ignoring the strength of the enemy and deliberately attacking the largest ship he could find.

And now to Nelson, the other and even greater figure of that tremendous era, the man who owed so much to Jervis's monumental work in building up an efficient instrument, and who was never tired of expressing his admiration and reverence for his chief. This thesis might be expected to suffer partial or total destruction when we review a life which seems to have been a continuous succession of triumphs ; yet Nelson's moment is, if anything, more clearly marked than that of any of the distinguished men whose careers we have already discussed.

At fifteen he was in the Arctic glorying in adventure and action. When only twenty-two he was the inspired leader of the Nicaragua

expedition, an ill-fated but amazing project of which more would have been heard but for the larger movements and battles that were startling the world at the same period. In the Mediterranean under Hood, Hotham and Jervis, there was no lack of opportunity for such as Nelson, and his rare courage, judgment and inspiration were soon in evidence; but his really great moment did not come until he was thirty-nine and in command of the " Captain."

At this time Jervis with fifteen ships was charged with the task of preventing twenty-six ships of the Grand Fleet of Spain from joining the French fleet. He met the Spaniards off St. Vincent, and found the enemy fleet in two divisions some distance apart. He led his ships so as to pass between the enemy's lines, but the fleets were on opposite tacks, and soon it became necessary for Jervis to tack if he wished to remain in action. This he did, but it was a slow, cumbersome business with those great ships, and by the time the leading ships were round, it was evident that when the movement was complete, the British fleet would be astern of the Spaniards and, more important still, there would be clear water between their two divisions, so that they would be free to unite their force.

In the rear of the British line were the 100-gun ship " Britannia," the 90-gun ship " Namur," the 74-gun ship " Excellent " under Collingwood, and the 74-gun ship " Captain " under Nelson. Commanding the fleet was the inspired, revered, and by many dreaded, figure of John Jervis, who above all else stood for strict obedience. He had decided to tack the fleet. Even to those in the rear, and therefore nearest to the enemy, there appeared to be nothing else to do but to obey orders. Not so Nelson ; his moment had come. He gave orders to wear ship, hauled out of line, and threw his relatively small vessel on the central mass of the Spaniards—great ships of 130 and 112 guns. No need to dwell on subsequent events. It will suffice to say that a battle which might have been one of those half-begotten and half-forgotten affairs was turned into a great victory. It must be remembered that there were distinguished seamen commanding the ships ahead and astern of the " Captain " ; a Vice-Admiral's flag flew in the " Britannia," a dominating personality was in supreme command in the " Victory." Collingwood went to Nelson's support later on, but that was in obedience to a signal from the Commander-in-Chief. The opportunity was there to be seized by anyone of the Captains or the Flag Officer in the rear division, but Nelson alone took it. It was his golden moment.

Although, in this short review, it is only possible to allude to some of the most famous Admirals of the XVIIIth century, if we investigate the careers of other great seamen such as Hood, Pellew, Cornwallis, to

mention only three other prominent figures, it will be found that they too had their golden moments, and always shortly after they reached a position of responsible command. In fact, except on those rare occasions of overwhelming victory following an ordered tactical approach, every battle offered opportunity to someone in a subordinate position to turn partial success into substantial victory, or at least to redeem a deteriorated situation.

The Great War is still so close to us that it is difficult to be certain that we view all its incidents in the right perspective; but the great moment of one of our naval commanders seems to be so clearly defined as to merit adding to these historical examples. Admiral Beatty's name will ever be associated with the Dogger Bank action and the battle cruisers fighting at Jutland. But, before that, he had seized his moment. It came during the affair in the Heligoland Bight in the early days of the War. The battle cruisers were at sea, when there was a call for help from light forces operating in the Bight. There was every reason for not taking heavy ships into those waters, for the enemy minefields were uncharted and intelligence was scanty. What a tremendous decision to make! But he made it; the battle cruisers rushed in and success crowned brilliant initiative and courageous risk. It was in this spirit that Hawke dashed into those uncharted waters of Quiberon Bay with a rising gale behind him, and Rodney drove on through the night pursuing Langara's fleet into the shoals and dangers of the Spanish coast.

Over and over again, therefore, we see in nearly every big affair in the war at sea one man in a comparatively subordinate position doing something unexpected, dramatic or decisive, yet correct in the outcome; thereafter passing from one glory to another until, in a position of high command, he emerges victorious after a great battle to secure a definite and honoured place in history. Usually we read lives of these men telescoped into so small a compass that we get an impression of one long riot of adventure and great leading; but we must remember that although in the XVIIIth century hostilities flared up again while the ink of the last Treaty was hardly dry, and although the *beau sabreur* in one war was given his chance of responsible command in the next, there were, for all these men, long periods of hard service when they were out of sight and out of mind, and when fortitude, faith and earnest devotion to duty were their supporting pillars.

The golden moments have been thrown into strong relief, but if we are to profit by this intrusion into the past and get from it something of practical value to us to-day, we must not ignore the years of preparation, and the ever-recurring silver moments which these great men never

allowed to escape them. These require deeper study in the pages of history, and in the case of the Elizabethans we might be disappointed owing to lack of material. But the lives of all our great Admirals, from Anson onwards, have been subjected to exhaustive examination by a host of writers, and the silver moments will be found to stand out as clearly, if not so dramatically, as the golden moments. Some were more favoured by fortune than others. Saumarez and Pellew, for instance, were thrown into the vortex of fierce and bloody fighting when in their teens and emerged with a reputation for courage and initiative. But more often the silver moments came during monotonous service in distant parts of the globe or during long years of sporadic warfare and blockades, which, although perhaps unrecognized at the time, were slowly and tediously, yet irrevocably, leading on to the culminating clash between the big fleets.

Initiative in a boat expedition, an immediate and correct decision as officer of the watch when confronted by the unexpected, courage in departing from the orthodox during a minor operation, a risk taken to achieve an object, determined and correct handling of insubordination —these are the things we read of in the less dramatic pages, but which also bring their lesson for us to-day. This lesson is easy to read. Every war has been proclaimed " war to end war." " Perpetual and universal peace " is a constantly recurring phrase in the old Treaties. Meanwhile a generation springs up that undergoes intensive training for battle, and yet is unable to visualise the circumstances in which that training will be put to the acid test. The lives of their predecessors— a rich record of adventure, battle and unfettered diplomatic work in distant seas—seem to bear little relation to their own lives. Yet, if he who runs will read, he will find that though battle alone may offer the golden moment, only those who seize the silver moments in time of peace are ready for the great event.

# THE STUDY OF WAR BY JUNIOR OFFICERS

By Major J. K. McNair, R.A.

On Wednesday, 10th February, 1932.

Air Marshal Sir Robert Brooke-Popham, K.C.B., C.M.G., D.S.O., A.F.C., in the Chair.

The Chairman, in introducing the lecturer, said that he was peculiarly fitted to speak on "The Study of War by Junior Officers," because he had the exceptional experience of having been to two different Staff Colleges; he had also done regimental soldiering and been on the staff both in India and England; and he was just the right seniority, combining the mature knowledge of age with the joyous carelessness of youth.

## LECTURE.

THE object of this lecture is largely to promote a discussion which will enable officers of all three Services to give their impressions of the facilities they had in the junior ranks for studying war, and to make suggestions for improving those facilities.[1]

Personal experience must, of course, vary with the character of the individual, the Service to which he belongs, and his particular environment. No one of us has had experience in the junior ranks of more than one Service, so that a lecture such as this must, in any case, be based on the speaker's own experience, supplemented by what he has been able to glean from officers of the other Services. But, even so, I am at once confronted with a difficulty. Everybody of about my age will, I think, agree with me that we did not go through the normal stages of education in the junior ranks. When the Great War started, we had not got over our teething troubles, that is our earlier regimental or technical education, and when it finished we found ourselves promoted in rank and responsibilities beyond our advance in age. We found, too, that our knowledge was definitely behind what it should have been, because, in spite of the saying that "the best training for war is war,"

[1] A number of valuable contributions were made in the discussion, but the subject merits further attention. Short articles or letters to the Correspondence section of the Journal dealing with it will, therefore, be welcome.—Editor.

fighting as seen by the junior officer gives him little knowledge of principles. So my personal experience may not be of great value as a guide, but I will try to give you a few points to serve as a basis for discussion, and I hope that those who have had a normal peace-time training in the junior ranks, either before or since the War, will contribute from their experiences.

## CHARACTER.

Now, if we are to guide a young officer on to the right lines, we must first be clear as to what we want him to be. In other words, "What is the object of training and what part does personal study play?" The British system of discipline is based on a spirit of confidence and good feeling as between officers and men, and therefore, first and foremost, we want to produce men of character. Knowledge can never be an end in itself, but it is the only sound basis on which character can be built. I know that this has been said and written many times before, but I make no apology for introducing it here, because, when talking about reading, writing, discussions and other methods of acquiring theoretical knowledge, we are very apt to forget it. In fact there are some people, in the Army at any rate, who think that we try to over-educate the average officer. They argue that only a small proportion of officers ever rise to the higher ranks. The great majority never rise beyond the rank of lieutenant-colonel, and, up to that rank intellectuals are not required in any great number. It is the quality of leadership that is wanted, and that needs developing. The few who are going to continue and form the intellectual leaven, are usually Staff College graduates, and their education can be left to look after itself. However, whether that view be held or not, one thing is certain. There is no place for the mere bookworm. Let us keep in mind, therefore, throughout this talk on personal study that the goal at which we aim is men of character and sound judgment with the capacity for leadership, and not mere pundits.

The next question is "what is the material on which we have to work," that is, "what is the character and mentality of the young officer when first commissioned?" Until that moment, we must remember, he has been under fairly rigid discipline, and has been used to all the petty restrictions that are necessary in the various educational establishments through which he has passed. Now, for the first time, he feels a measure of freedom and has a natural desire to enjoy life while he is young. Yet he probably realises that he is at the bottom of the ladder again, and that he has got a lot to learn before he can begin to pull his weight in his new surroundings. At what age, then, should personal study begin? On the one hand, if the brain is not used,

in time it grows incapable of being used. Most of us have come across the man of thirty-five or forty who, when suddenly called upon to use his brain in a way he has not done since he left school, finds himself totally unable to respond. Many of us found, even after four and a half years of war, during which we read little and wrote less, that it was extremely difficult to sit down and work for the Staff College. Personally I failed to qualify at the first examination at which I sat in February, 1921, simply through sheer inability to complete the first paper in the given time. The brain simply would not work. So the brain must be kept in trim. On the other hand, the young officer has got to learn his duties as an officer; he has got to learn to handle men; and he has got to do his practical training. These matters take up a deal of time, both during work and play hours. It is, therefore, a mistake to force personal study too early.

The average young man has no natural inclination to sit down and read deeply. If he has, there is something wrong with him; he is abnormal, and he is either half-way to becoming a Napoleon or half-way towards qualifying for the bowler hat, and we can leave him at that. Generally speaking, for the first two or three years of his commissioned service, the young officer does not require an intensive theoretical education. Instruction in the practical duties of his rank, instruction in the manners and customs of his Service will be quite sufficient to keep his mind in trim, and to develop his character in the way it should go. In making this assumption I may, perhaps, be talking too much from the point of view of my own Service, although I think the Air Force will agree. The Navy take their personnel in hand so much earlier, that they may have different views. In any case, I think there can be no doubt that it is here that the commanding officer has a great responsibility. If he lets the young man go on too long without study, he may never be able to catch up; while, if he starts him too soon, he may either disgust him or turn him into a bookworm. Both are equally bad, but only a good judge of character can decide the psychological moment to take him in hand.

## THE SENIOR OFFICER'S RESPONSIBILITY.

Having arrived at this stage, let us look at the question from the point of view of the senior officer charged with training. To begin with, it is not everyone who can teach; with some it is a gift, to most it only comes after practice; a few will never be any good at it, however much they practise. But when we speak of teaching as applied to officers, we do not mean that type of forced education which is necessary with schoolboys. Any attempt at educating the adult mind is useless

unless it has the active co-operation of that mind. In fact, the adult mind has got to educate itself. The teacher can only guide and criticise.

The first thing, therefore, is to excite interest. In the very early stages of an officer's career, much influence is exerted by the atmosphere in which he lives, and senior officers can do a great deal to discourage a parochial outlook. For instance, some time ago in India I was talking to an officer with about eight years service, and I was amazed to find that, although he had been three years in that station, he did not know who the chief civil official of the district was; nor did he know anything about how that particular part of the country was run. That is an example of what I call a parochial outlook, and I was not surprised to hear a little later that that officer had failed to pass his promotion examination. Fortunately, this narrow outlook is not as common as it used to be. But there are still some officers whose horizon is bounded by their own Service, who have few if any friends outside it, whose reading of the newspapers is confined to the sporting pages, and who are totally unable to appreciate the point of view of the average civilian. In these days, when war is the affair of the nation and of every individual in the nation, that is wrong.

Of course, the young officer should be proud of the unit in which he is serving, and it is quite natural that, during his early training, his conversation and interests should be based largely on his day-to-day experiences in that unit. But senior officers can do much by example, firstly, to make him realise that his own Service is a big and complicated organization that requires study, and secondly, to encourage him to take an intelligent interest in the affairs of his country and of the world at large.

As we are talking about teaching, I should like to advance a plea for the system of promotion examinations. I know it is often said that to pass an examination requires a particular kink in the brain, that not everyone has this kink, and that some otherwise good and practical officers therefore fail to pass; but apart from any other consideration, I suggest that the system is of value from the point of view of the senior officer responsible for training his juniors. An expert scientific witness in a recent case was asked in cross-examination by counsel "are you a master in your profession"; he replied "if by 'a master in his profession' you mean one who knows all there is to be known about his profession, there is no such person, either in science or in law." Every officer of any seniority knows that there is no time until we retire at which we can sit back and say with a clear conscience "I don't need to learn any more." But the young officer does not realise this, while senior officers are far too busy to occupy themselves continuously

with directing the personal study of a lot of junior officers, all in different stages of development. This is where the promotion examination comes in. The knowledge that he has got to pass it by a certain age or a certain date provides the young officer with a very necessary spur to study.

Again, aimless study is of no value. If the student is to get full benefit, there must be some definite standard to which he should work. How many men are there who, faced with the training of young officers, could make out a satisfactory syllabus for their work, or who could lay down a standard which they ought to reach? Without some official help, I think most people would be rather at sea. The promotion examination fulfils this function. The syllabus gives both teacher and student a standard to which to work, and former question papers provide a very valuable guide to the teacher in assisting the work of the student.

## READING.

Having created the right atmosphere in a young man's life, the next thing is to start him off on his career of personal study. He has got to read. If he receives no guidance, he will probably do as I did, take a book out of the library that has been recommended to him by somebody, and retire to his room with it. There he will sit down in an armchair, yawn over it for a day or two, perhaps memorize imperfectly a few facts, forget to put the book back until reminded by the librarian, and in a week or two he will have forgotten everything he has read in it. So he must be told how to get value from his reading. The same methods may not of course suit every man, but there are two general principles to follow. The first is: never to sit in an easy chair. The normal young man has probably got no time to sit down to work until the evening, and he has probably been doing something fairly energetic during the day. In these circumstances, an easy chair produces a feeling of lethargy, and very shortly all his energies are being spent in keeping awake. There comes an age when it can be done, but it is not when one is very young. It is much better for him to sit up at a table with his book, and a pencil and paper beside him. Incidentally, it is curious to note how most men find the evening after dinner the best time to work. I say "curious," because we often read in biographies of great men that they used to put in a couple of hours before breakfast because the brain was supposed to be clearer then. I am afraid that if the ability to study on an empty stomach is the hall-mark of genius, very few officers I have met are likely to go far.

The second principle is: "always try to reproduce something of what you have read in your own words." For some the best way is to make notes of various points in the book as it is read, others may find it

better to write a short *résumé* of each chapter as it is finished, or possibly of the whole book. It depends very much on the individual, and also on whether the book is being read with the object of getting ideas or of getting facts. Another excellent way of getting full value out of a book of the type designed to make one think is for two officers to read the book at the same time, and to discuss it together.

## WRITING.

The next stage is to get the student to think for himself, and to apply what he has read. To do this he must write. This writing may take the form of solving tactical schemes or exercises, or may be in the nature of short essays or answers to set questions. Whichever it is, the object should be to put his own ideas into his own words. It is here that the senior officer comes in in two ways. Firstly, the young officer wants some guidance in setting himself these problems—I am not suggesting that everything he writes should be set by a senior officer; that would be violating the principle that the adult mind must educate itself—but at the outset, and occasionally afterwards, he wants some help as to the type of problems he should set himself. The methods must vary to a certain extent in each Service. Secondly, there is the necessity for criticism. Writing will do the young officer little good unless his efforts are occasionally reviewed by a senior. Criticism should, of course, be constructive, but particular attention at this stage should be paid to eradicating false ideas and impressions. In order that the young man should learn to express himself clearly and concisely, his style should also be examined, and anything which might tend to ambiguity should be exposed. I think perhaps, at this stage, verbal criticism is better than written remarks. But perhaps the best way of all is for the teacher, if he has time, to make notes and then discuss them with the student afterwards; the latter then gets something concrete to take away with him and digest, after he has asked questions to elucidate anything he does not understand.

## MILITARY HISTORY.

So far I have discussed this subject in general terms; now I want to touch on one particular aspect—the study of military history, using the word "military" in the broad sense, of course. The Army Training Manual says, "military history must unquestionably have the most important place in study as being the best means of learning the true meaning of the principles of war and their application, and of studying the preponderating part which human nature plays in all operations."[1] Military history, however, can be a dry-as-dust subject if taken in the

[1] Training and Manœuvre Regulations, p. 14.

wrong way, and it is just this study of the human side that converts it from a labour to an interest. In discussing mistakes made in past wars, one has often heard such remarks from beginners as " Why on earth did So-and-So do that ; they couldn't have known much in those days." What the junior officer does not realise is that it is always easy to be wise after the event when full information is available, but that it is a very different thing for the commander who has to make a decision in battle with incomplete and often conflicting information, while bearing the responsibility for the safety of his force. It is by drawing attention to this aspect, by " painting the picture," as we call it nowadays, and by thus giving him something of the atmosphere of war, that the senior officer can help so much.

Then there is another way in which senior officers can help. History used to be taught very badly in most schools, and there still seems room for improvement in a good many. The school history book is, too often, a dreary recital of events punctuated by dates. The result is that the reader comes to regard the great men of history as mere names. I think that a large number of junior officers, when they first start to study military history, are apt to look on the leaders of the past as impersonal beings, and they will not get full value out of their reading unless they try to learn something about the characters of these leaders, and try to see them as human. A study of character often shows the reason for success or failure, and always helps one to understand the reason for a decision, or possibly for indecision. Here also senior officers can help by drawing the attention of the young student to the importance of the human element. Of course, it is not everyone who starts with the outlook I have just mentioned. Some boys have a bent for history, and come from school with a very fair realization of how to study it. To others the realization may come without prompting by their seniors. Personally, I was one of those to whom history was taught in the bad old way at school, and I could never summon up any interest or enthusiasm for it. One day I thought I had better do some work, and I took a book on the Waterloo Campaign out of the library. I was sitting in an armchair reading it, when I came across the story of how, after the battle of Ligny, in which Blücher had been unhorsed and had been ridden over by a regiment of cavalry, he had to go to bed that night sober for the first time in his life because he stank so much of the onions in which he had rolled that no one would drink with him. I have since read other versions of the story, and do not even now know whether it is true, but at the time it suddenly struck me that here was no mere name in a history book, here was a real character, a very tough old gentleman of seventy-two.

What, then, is the best way to help the majority of young officers to read military history? I am sure that no academical directions to choose certain books, or even to write certain papers, will suffice. There must be something more personal, and I suggest that the only way really to rouse the interest of the young officer, and to make him read intelligently for himself, is to make him talk. He should be made to talk, not in a large lecture room full of more senior officers, but in comfort, with others of his own rank and seniority about him to join in the discussion. This is the way I have seen it done in my own regiment. At the beginning of the winter a campaign is selected for study, and officers are told that there will be discussions towards the end of the period. About January or February a list of points to be discussed is given out, together with a note to those who have not previously taken part emphasizing that the discussions are not in the nature of an examination, and that they may bring any notes or books that they may require, the object being a mutual exchange of ideas. The points are as far as possible linked up with appropriate paragraphs in the training manuals. Then in February or March the discussions take place on, say, two evenings running between tea and dinner. The officers meet in some room in the mess, where they can be comfortable, and smoking is allowed. A senior officer conducts and, of course, the more junior the officers the more will he find it necessary to help them out, and to keep them on the right lines. But the conducting officer should take care that the discussion does not degenerate into a lecture by himself, and he should normally confine himself to summing up on each point. Of course, it goes without saying that a lot of preliminary work by the conducting officer is necessary. An occasional discussion like this makes military history very interesting, and enables commanding officers, with a minimum of effort on their part, to make certain that their juniors are studying on the right lines.

Before we leave military history, I want to say a word or two about books, because a young officer just starting to study wants good advice on the choice of books to read.

As regards wars before the Great War there is not much difficulty, because certain books have by now come to be regarded as standard works, and it is usually quite easy to pick out one which will give the young student a good general outline of the campaign he is studying. Most of these standard books contain plenty of comment as well as facts. Some of them are rather dry reading, and it is a good plan to read in addition a good biography in order to get at that human side to which I have referred.

As regards the Great War the problem is more difficult because there is such a quantity of literature. Many of the books contain

masses of facts but little or no comment; others contain plenty of comment but were written too soon after the War for that comment to be entirely impartial. Some are distinctly one-sided, because the authors have been biased by their own personal experiences, others are frankly egotistical and written with the object of replying to criticism. So it is not an easy matter to advise the young officer where to start. Perhaps it is best always to start off with the Official History, and then to take, say, two other books written from opposite points of view. I cannot go into more detail here without making invidious distinction between books, but the one thing that stands out seems to be that the officer guiding the study must himself be well-read, and must be able to discriminate between the book which will give the young officer the right atmosphere, and the book which, although interesting, is best left alone till later when he has reached the stage when he can perceive its true value.

## CONCLUSION.

I have tried to give, from my limited experience, some idea of what the junior officer lacks and the sort of help he requires. I have rather confined myself to the initial stages, because it is obviously then that he wants most help. I have suggested, too, that the ideal should be two partners—the junior officer who is studying and who must educate himself, and a senior officer who should guide and criticise. Unfortunately, in this imperfect world, there are always difficulties. The nature of these depends largely on the conditions in the various Services, and they are not, therefore, suitable for discussion in a general lecture such as this. But there is one, which stands out in the Army and which is probably applicable to the other Services. If a commanding officer, charged with the responsibility of training his young officers, is going to do all he might to help them in their personal studies he will have no time to command or train his unit. Nor is he always in a position to delegate this responsibility. Take his case in the Army. In an average regiment there are seldom more than two or three other officers with sufficient seniority, capability and experience to assist juniors. And these, because they are capable and experienced, are always being asked to do other jobs outside the regiment. As I have said, the system of promotion examinations does help the commanding officer a lot, both as an official urge to study and as providing a syllabus of work. But even then he can rarely give junior officers all the attention he would like. There does not seem to be any solution to this problem.

Again, the mental capacity of individuals varies so much, that methods suited to one may be totally unfit for another, and there must be difficulties in one Service which the others do not necessarily experience.

But the main thing is to arouse interest and enthusiasm and to create the right atmosphere. As Dickens wrote, " if you had all the abilities of all the great men, past and present, you could no nothing without sincerely meaning it."

DISCUSSION:

ADMIRAL SIR H. W. RICHMOND: The lecturer asked at what age the young officer should begin this study. It is difficult to lay down any hard and fast rule, but I think myself that one might take the age of a man in a civil profession at the time he is beginning to study the higher branches of his science. Take law, medicine, or any of the professions; it is somewhere about the age when he goes up to the University. There he continues his general education, but he is also beginning to some extent the special education for his profession. That seems to me the time at which the young naval officer —and I presume the same thing would hold for the military officer—should begin turning his mind to this particular side of his business. My own difficulty, if I may mention a personal experience, which is probably not uncommon, was to understand how to set to work intelligently to read anything about war. One saw innumerable volumes on the shelves, but one did not know how to read them. I am inclined to think that what we all want in our younger days is to have some broad understanding of what I would call the general nature of war, so that a boy taking up a book and studying war will have in his mind a very broad picture of war as a whole before he begins any particularised study.

The question of " how the forces should be used in war " is one which permeates the problem of strategy in every big war, and should be understood and brought out in a study of war. It is not difficult to make an analysis of, at any rate, the greater wars in which we have been engaged, and such a broad picture is extraordinarily helpful.

In the old days, men were reared up in the tradition of war; it was the A.B.C. of their ordinary life. If this country went to war with France, or Spain, or Holland, they knew that, in all probability, something would be done in connection with the enemy's trade; also, if we were acting with allies, where we should throw in an expeditionary force. Though many of them went to sea young, they had a very general idea of that kind of thing. Then, too, the young men of that time read a great deal. For example, Wolfe did an extraordinary amount of reading as a young man on garrison duty in Scotland. Nelson also read a great deal as a young man. They had the proper foundations, and they were able to apply their minds to the useful reading of the books they could get hold of at that time.

Where are officers going to get the opportunity for obtaining that outline now? In the case of the Navy, Sub-Lieutenants go through a war course. That war course should include a general study of war, with an analysis of the principal wars in which we have been engaged. The subject should be presented to them in such a manner that they could see the way in which the national forces were employed. We should give them something to start them reading and working things out for themselves. I quite agree with what the lecturer has said about leaving a young fellow to his own reading: but he must both read and write. It is a great thing if there is a senior officer who will lend him a hand, but I think —and I have tried this with some of the youngsters who have been keen on it— that if he is given a little help he can afterwards go along quite well by himself,

and that not much of the time of the commanding officer need be taken up in this respect. Sometimes one hears the suggestion that it is only one man in a hundred who becomes a Field Marshal or an Admiral. The answer to that is that an officer can never be sure that some slight accident of fortune may not bring him promotion very young, and unless he has prepared himself in some way, he may make a mess of things and be unable to grasp the opportunity when it is extended to him.

### The Value of Examinations

A Member: I think that in view of what the previous speaker has said, and of what the lecturer himself said, it would be a very great pity if we left this meeting under the impression either that the only thing that junior officers have got to study is the history of war or that examinations in any way improve the mind.

To deal with examinations first, I must say I am whole-heartedly with the lecturer in so far as he points out that examinations do serve as an introduction to study, and to the study of war in particular; but I do think that is where the value of examinations ends. Anybody who considers that studying for examinations improves the mind is an optimist. The object in view, is, I suggest,not to improve the mind, but to get marks.

So much for examinations. Now as to the study of war. The lecturer, in a very entertaining way, got us thinking about study, and then slid off into the study of military history. Most of us are very interested in military history, but there are other things we have to study. For example, in the Staff College examination, history such as the previous speaker referred to, takes up roughly about 10 per cent. of the papers, and of the marks. But there are many other subjects —the manuals, law, transportation, general administration, geography, not to mention how many bicycles there are in the battalion—and the result is that there is very little time in which to study military history or the history of war in order to get the necessary background. Such a background is fundamental, but you cannot get it without study, and yet there is no time for that study.

Colonel W. G. Lindsell: I would like to say a word in defence of promotion examinations and in reinforcement of the principles the lecturer has placed before us. My view is that if you want to obtain any standard of education you have first got to make sure that your standard of examination is a correct one. I am quite convinced myself that examinations do form a very valuable guide and a means of obtaining and maintaining the standard of education we require. If we want to get any particular subject studied we set questions on that subject in the examination, and we know then that that subject will be studied by those who have to prepare themselves for promotion. The principle generally followed in introducing a new subject is to set an alternative or voluntary question on it for the first time, and then return to the charge in a later examination and rub home that subject until we get the Army, or a portion of it at any rate, engaged in studying that subject.

I should also like to impress upon everybody who is responsible for getting the officers to come up for examinations, the advisability of the young officer taking his examinations early. We are up against the real difficulty that he does not get down early enough to his books. Roughly fifty per cent. of the Army is on service abroad, and it is much harder to work for examinations in India, where the cool weather season is spent in training, and hot weather does not stimulate mental activity for bookwork. Further, we are called upon to find officers of suitable qualifications to fill many important appointments under the

Colonial Office. Officers do require to have a real knowledge of their profession before they can handle these appointments successfully. A man may find himself in West Africa or elsewhere faced with big questions, semi-political in nature, and it requires all the study he can get in to fit himself to deal with them. Then, after running a place perhaps half the size of Europe, he comes back to civilisation in the Army after four or five years absence. Having been out of touch with purely military work for so long, he finds it very difficult to pass promotion examinations, and he wishes then that he had them behind him. Therefore I do urge that young officers should be encouraged to go in for examinations as soon as they can.

### The Commanding Officer's Problem.

Colonel D. F. Anderson: Having recently completed four years as a commanding officer, I should like to say that I agree entirely with the principles which the Lecturer has laid down for helping junior officers to study their profession. I have tried to apply the principles, but I feel, as probably do most other commanding officers, that I have largely failed, owing probably in some measure to inherent difficulties.

First of all, I would like to reinforce what Colonel Lindsell has just said about promotion examinations in the Army. They are very much criticised. He has been looking at the subject from the point of view of the War Office; I am looking at it from the point of view of a commanding officer. I have found in the training of junior officers that these examinations are most helpful. If you make an officer begin to work for promotion examinations as soon as he can, it gives him a very good start in studying his profession, and certainly at that stage I do not think you can state that examinations are harmful at all. In fact, they form a very good object for his preliminary study.

As soon as an officer joins the Service, certainly in the case of the Army, he should be encouraged to study—I do not think there should be any gap. At the Royal Military College and the Royal Military Academy the course of training has been much broadened, and is now less narrow in the military sense. The Cadets are trained to take a broader outlook, and they are taught to do some reading. Therefore one wants to go on with it immediately, and not spend two three years during which the officers are merely learning technical subjects.

I agree entirely with what the Lecturer has said about the value of discussions, not only for studying military history, but for other subjects which are equally important, such as organisation and transport, and still wider subjects. These can be dealt with very well by discussions, if, as has been explained, they are well prepared.

One point that does strike one in the Army very much is that as soon as officers join, if it has not been done before, they should be trained to write. It is an accomplishment in which we in the Army are very backward. There are officers who, when they join their units, are hardly capable of putting down on paper what they mean at all. Such a study, as has been explained, can be very well combined with a study of the various other subjects.

The actual difficulties giving effect to these principles in the Army mostly relate to lack of time, especially abroad. A second difficulty may arise from the absence of an adequate number of senior officers who are qualified and able to do their part. One hopes that, ultimately, as the standard of the junior officers is improved and they themselves become senior officers, we shall have a body of men better qualified perhaps than some of us now are to assist those who will then be junior.

### The Junior Officer's Point of View.

Lieutenant A. C. Cottell: A discussion on the training of junior officers is always bound to come back to the question of examinations. If I may give my opinion, I think that they are very good things. When a young officer joins his regiment or other unit he is, at first, rather out of his depth. At school, and then at Sandhurst, he has worked his way up the tree, and now he has to start again at the bottom. Added to this, he may be disappointed because a lot of hard work which has secured him a high place at Sandhurst does not seem to help him, and those who just drifted and scraped through their examinations are every bit as well off. In this new life, too, he finds himself responsible for men, but does not fully realise or understand his powers. Thus the first year is spent in getting on his feet, so to speak, and during that time he discovers various means of enjoyment and recreation, while the close supervision of the school authorities is removed. The result is that his outlook on the professional side of his life is not yet very clear, and work may seem rather a bore.

Then this question of an examination comes up; at first, perhaps, it is rather dreaded, but later on I think the average officer becomes, perforce, quite interested. Subjects are presented in a form never taught at school; for example imperial geography and military history are studied from a different point of view from that held towards their school days' equivalents, and, by the time the examination is actually due he is thoroughly interested in them. Articles and items in newspapers are found to bear on these subjects, which makes them seem more real and alive, and adds to the inducements to follow them up. Books dealing with them are sought and read for sheer enjoyment. By way of relaxation a novel may be picked up, but by this time reading novels has begun to be considered as rather a waste of time unless they have some relation to the subjects being studied, and more serious works seem more worth while.

That, I think, is one of the great reasons why promotion examinations are really valuable. They set the interest going, and once going, the young student decides not to lose all this effort but to carry it on into preparation for the Staff College; and all this comes about because a rather desultory career has been pulled up short by being confronted by the promotion examination. Of course it is rather difficult for an officer to prepare for examinations when, after a few years' service, he is just beginning to be of some use to his commanding officer —at least he hopes he is—and to have more responsible jobs given him which have to be done decently. If he has become interested in his studies, and at the same time his seniors are making efforts to train him in his daily duties, he finds his time pretty fully occupied.

Another advantage to the student is that he finds subjects in which his senior officers are interested, and which they are always willing to discuss. By this means it is suddenly brought home to him that they are not really ogres but interesting and pleasant human beings, only too glad to be regarded as such. Senior officers can do a great deal to help the junior who is beginning his studies by remembering the time he requires for them when giving him other duties or sending him on courses.

With regard to lectures on military history, many units do have lectures which are of value, but—I say it with all respect—there are some senior officers who are not the best of lecturers. I think, therefore, when such lectures are given, care should be taken to see that the best people available give them, otherwise officers attending them may easily become bored and learn nothing. This really applies to all lectures. For example in a recent Brigade Administrative

Course, the best lecturers available in the Command dealt with each subject, and it was amazing how everyone got thoroughly interested, and there was no disinclination to go back at 5.30 in the evening and listen to a lecture until 6.30.

With reference to the study of campaigns, one never sees good novels or reminiscences mentioned in the lists of books recommended for study. I, personally, believe a great deal in this method of study. At school I learned more history from Henty, Ainsworth and their like than I did from the text books. In fact, I still find that after reading a series of personal reminiscences and novels dealing with the campaign I am studying, the text book becomes interesting and begins to seem alive.

I think that if the training of the junior officer is carefully thought out and not done merely as a matter of routine, and if the best people are put on to it, the results will be found to be very much better, while examinations, however annoying they may seem when one is faced with them, will prove to be very beneficial.

### The Royal Air Force.

Wing-Commander K. R. Park, R.A.F.: In my opinion, the promotion examinations for junior officers are a very great aid indeed. I do not think there is any necessity for a long delay between the time an officer comes into the Service and the time when he starts study. The promotion examinations do not really require what you might call a higher study of war; they require getting down to text books, and more or less to details. Junior officers, therefore, need not wait three or four years before starting study. I think it is very difficult for commanding officers in our Service to exercise the same supervision in this matter as they can in the Army, for the simple reason that we have so many highly technical branches and so many specialist officers. During the winter months the commanding officers can do a great deal, no doubt, by means of lectures and by correcting papers; but our great difficulty lies in the specialist branches and the highly technical nature of our work.

### Naval Training.

Commander A. M. Sheffield, R.N.: I think that in the Navy, even more than in the Air Force, there is a great tendency for officers to be wrapped up in material considerations. I was one of many who, as a result of the War, missed Sub-Lieutenants' courses and their substitutes. It was not until I reached the rank of Lieutenant-Commander and became commanding officer of a ship that I found any real opportunity to study war.

I suggest that squadron or fleet lectures on this subject might be of great assistance to the younger officers of the Navy.

### The Royal United Service Institution and its Facilities for Junior Officers.

Captain E. Altham, R.N. (Secretary of the Institution): We hoped that we might, as the result of this meeting, elicit from the discussion and from the audience whether this Institution could do anything further to promote the study of war by junior officers. No suggestions to that effect have been made, but I should like to take this opportunity to bring to your notice that, of late years, the Council have paid increasing attention to the interests of those officers. In days gone by, I think, there was a general impression that the Royal United Service Institution was rather an aloof place, where very senior officers foregathered and "fought their battles o'er again," or abused the Admiralty or the War Office or each other.

and that the meetings in this theatre were distinctly pompous. I hope we have eliminated that impression, and this meeting is strong evidence that officers who are not so very senior do regard lectures of this sort as being of interest to them.

We are trying to help serving officers, including junior officers, in four ways. Firstly, there are the lectures. If you look down the programme for this and recent years you will see that most of them are on really practical subjects. They deal with Service questions of to-day and with international affairs of the moment. Then there is the JOURNAL, to which we are getting an increasing number of contributions from serving officers, while the Admiralty, the War Office and the Air Ministry, far from putting obstacles in the way, help us in publishing the views of those officers. Our contributors are not confined to writers of very great seniority or of very specialised knowledge, and we welcome articles of every sort from even quite junior officers. If such officers are at all diffident about their powers of expression, let them send the material to us, and we will give it the finishing touches, or if an officer is a little off the lines we shall not hesitate to write to him and say where we think he has gone wrong and ask him to try again on other lines.

Then there is the library (which is now included in your subscription). A great many officers do not yet realise that one of the advantages of joining the Institution is that Members can take four volumes out at a time and thereby save themselves a lot of expense in buying a number of books which, once they are read, only become a nuisance to carry about. We make a special study of promotion and Staff College examinations, so that as far as possible we have a good stock of the particular works required by Members reading for those examinations.

Lastly, I want you, if you will, to regard the staff here very much as people you can go to for advice as to what to read on any particular subject, what to write, and how to write it.

As an indication of how very real are the facilities which the Institution now offers to junior officers, and how those officers are beginning to realise and take advantage of those facilities, we have just had the report of the referees, and the Council have authorised the opening of the sealed envelopes containing the names of those who competed for last year's Gold Medal Essays. There were fifteen entrants—it was a pretty difficult subject—and the winner of the Gold Medal is a Sub-Lieutenant, R.N.—the youngest and most junior officer who has ever attained that honour.

THE LECTURER:

There was one point brought out in the discussion which I should not like to pass unanswered, although one speaker has partially answered it. One of the early speakers seemed to imply that in the Staff College examinations there were many subjects like transportation, the number of machine guns in a battalion, and so on, which were not part of the study of war. I think that is a great fallacy. I have always been taught to regard, and have regarded, transportation as a weapon of war, a most important weapon, and one which is not nearly sufficiently studied. I do hope, therefore, that other people will agree with me, and not with the speaker who said that these things should not be included in the study of war.

THE CHAIRMAN:

As the Lecturer has said, there are many dull books on military history, and some very interesting books. Generally speaking, one may say that the dull

book is a bad book, and that the interesting book is the one that is going to be of most value. To quote from one of the good books, it is men and the characters of men that are of account in war. A book full of statistics does not teach that, whilst a book that tells us about human nature is at once interesting and really instructive. It teaches us the basic reasons why things happen as they do in war, and gives us a clue as to what steps to take to get things to happen in the future as one wants.

That is one point, and my other point is that it would be a great mistake for junior officers to think that they are going to become bookworms simply by forming a little library of their own and getting interested in study. My experience as a regimental soldier was that the officers who were keenest on their work and their studies, those, for example, who went off in the winter evenings between tea and dinner to work in their own rooms, were also the keenest on hunting and polo, and were the people who generally won the regimental point-to-points. If an officer has initiative, drive and energy, it will manifest itself through his brain as well as through his body, and the more scope we give those qualities the more they will develop.

The customary votes of thanks to the Lecturer and Chairman were carried by acclamation.

# TECHNICAL EDUCATION IN THE ARMY

By CAPTAIN H. J. COOPER, R.A.S.C.

*" L'expérience de chacun ne se peut donc compléter que par celles des autres."*

EVEN a cursory acquaintance with the universal trend of thought during the past sixteen years makes plain the fact that education has assumed a leading place among the social services. A noticeable repercussive effect of this phenomenon has been felt throughout the Army. This is manifest in the creation of the Army Educational Corps, the establishment of the Army Technical School (Boys), the Army Schools of Education, Senior Officers' School, the expansion of the training establishments of the Royal Artillery into the Military College of Science, and the foundation of the Imperial Defence College.

The problem of the lines upon which purely military elements of modern military education should be taught is largely internal, but the purpose of any discussion of this question inevitably spreads somewhat wider afield, the more so because it is so easy to charge soldiers with a corroding conservatism which prevents them from fully and immediately exploiting to military advantage every scientific and artistic advance. Slow they certainly are, but in the main their movement is progressive, though it cannot be maintained that there never has been a period of retrogression. A survey of possible future progression is therefore essential to any consideration of military education.

" The age is one of machinery fast giving place to an age of science, the potentialities of which no man may forecast."[1] Should confirmation of this assertion be required, it is only necessary to compare the manœuvres of 1913 with the Battle of Cambrai and again the Battle of Neuve Chapelle with the exercises of last year. Modern invention has increased both the number of weapons of the soldier and their effectiveness to an astonishing degree, and to wage successful warfare these weapons—and the term " weapons " is here used in no narrow sense of rifle and bayonet—must be available in time and in ample quantity for each unit as it is mobilized. It seems, therefore, to be in the highest

[1] Lord Gorell.

degree important to consider the nature of the education of the soldier in the use and maintenance of the apparatus which industry will produce for his employment on and after an outbreak of war.

All difficulties which may be met during the career of a soldier are said to be soluble by those "two universal solvents—training and discipline." For what a man does depends upon what he knows, and what he knows depends upon where his interests lie—that is upon his training, upon the fashion in which certain facets of his character and certain qualities of his mind are planed and polished. Training in the Army is divisible broadly into two divisions—military and technical. The first is of primary importance, since it is sheer folly to say that if one arm does not understand another's business, it may still be well acquainted with that other's needs: thus each soldier—both officer and man—must be a soldier first and a technician afterwards.

Whilst the study of strategy and tactics may be rendered more interesting and their significance developed by a study of military history, and more particularly of British military history, there seems to be no single subject which will render easier the understanding of the divers sciences which go to compose the complex subject of military technology. In other professions there is a foundation against which those who indulge in their practice may set their knowledge and estimate their progress.[1] For the astronomer, pure mathematics; for the physician, physiology; for the miner, geology; and for the agriculturalist, botany. Many soldiers may have learnt at school the elements of chemistry and physics, may have explored to some extent metallurgy, electricity and hydraulics, and may even have come into contact with hydrostatics and the theory of machines and structures. The problem of technical education in the Army may be largely resolved by indicating the relation of these sciences to the profession of arms, the business of soldiering.

But as music cannot be completely studied without technical instruction, so may an exhaustive knowledge of modern war no longer be achieved without technical education. No single course of lectures can completely comprehend it, neither can a single text book be prescribed. The aspirant must be taught firstly to read for himself, to study the great variety of books dealing with his subject, to indulge in private research, and to weigh opinions comparing different points of view. Now between technical education afforded by universities, colleges, schools and factories and that given within the Army there is one vital difference. The civil curricula are concerned with the production or the manufacture of articles, whereas the military syllabus is chiefly

[1] H. Schofield, Ph.D.

concerned with their maintenance or their repair. That this difference has been inadequately recognised in the past is manifest in the methods by which soldiers, and in particular officers, have been trained. Those who will command and administer mechanical transport units in war are sent for several years to learn the methods of manufacture of the vehicles which will form their command. Those who will command and administer electrical and mechanical units in the forward zone perform a round of the works of cable manufacturers, the producers of electrical machinery and the makers of the apparatus used in field engineer units.

From the point of view of the individuals selected for this training the years are of absorbing interest, from the point of view of the nation, or of the Army, they are to some extent wasted: they are barren of any practical training in the tasks with which the majority of officers will be confronted in war. For which of them will be concerned with the forging and grinding of crank-shafts, the extruding of wire or the machining of turbine rotors and the milling of valve covers! In peace time certain of them will serve for a period in the technical sections of their respective branches of the Service, improving design, devising specifications and in checking and inspecting the apparatus purchased from civilian manufacturers. Many, however, will never be called upon to use the specialized knowledge which they have so patiently accumulated. To adapt Pistol's extravagant wit—the technical education of the soldier is every man's oyster, and every corps has been concerned at some time in an endeavour to secure a monopoly of this new force. Nor is it in our Army alone that this is observed, the armies of many nations have shown similar tendencies. It has been said that those knowing little of the arts and humanities and having but a superficial knowledge of the sciences grew frantic in the race for the control of the mechanized elements of their national forces; the reasons for this hysteria—they were not all altruistic—lie outside the present purpose of the author.

The present industrial tendency is to concentrate labour in huge factories, to assist the conveyance of capital into a few vast trading companies, and the present technical education tendency in the Army is to concentrate the technical educational processes in a few large establishments—the Military College of Science, the School of Military Engineering, and the Army Technical School; there is still some overlapping since corps must still maintain their own establishments for their especial needs.

The cardinal principles of technical instruction which are universally recognized by modern educationalists are given below side by side by what is considered to be their military technical counterpart:—[1]

[1] Mills.

| | | |
|---|---|---|
| 1. | That specialized instruction should include the teaching and application of the principles of science or art connected with a trade or industry, *and the practical application* of those principles. | That military technical instruction should include the teaching and application of the principles of science and art relating to each arm and branch of the Service *and their practical uses in the field.* |
| 2. | The object of the practical work or workshop instruction is to illustrate the practical applications of the underlying theoretical principles to a trade or industry and to teach the principles of certain processes with a view to supplementing but not superseding the training of the workshop or factory. | The object of workshop instruction is to illustrate the practical application of theoretical principles to the problems of war, and to teach the principles of certain processes of maintenance with a view to supplementing but not superseding the field training. |
| 3. | Those attending the special technical classes should be engaged in the occupations for which the classes were formed, the object being by theoretical and practical work to increase the standard of intelligence of the workmen and to supplement the training of the workshop. | Those attending specialist classes should primarily belong to the arm for which the instruction was devised, since it is supplementary to the field training of that arm, but other arms and branches should be freely admitted in order that an adequate measure of co-operation is ensured. |
| 4. | Technical teachers must have a wide practical experience and a sound knowledge of the scientific or artistic principles underlying the trade or industry. | Military technical instructors must have in addition to considerable ability, a sound appreciation of the relative values of military and technical education. |

The application of these principles must stand as the basis of all military technical education.

Since 1918 much experience has been gained in the training of the technical elements of the Army: some of it positive, much of it unfortunately negative. Those whose conceptions of time and space were learned during the latter decades of the nineteenth century, and have suffered various adjustments owing to subsequent experience of war, are conscious that their experiences do not altogether fit them for the control of the apparatus which has been provided them by modern invention. Just as the methods of Suvorov and Skobelev were unsuited to the Manchurian campaign, so are the methods by which horsemen, horsemasters, fitters, saddlers and wheelwrights were trained in the first decade of the twentieth century entirely unsuited to the training of those who will use and maintain the future apparatus of war. The reason lies close to the surface. There are many of us who, when we first read of the Struldbrugs, never thought that we would be likened to them.

For soldiers often forget they are mortal and, pursuing an active interest in the most active and arduous of all professions, take upon themselves the mantle of the wierdest and most morbid of Swift's conceptions. Those who have the greatest stock of receptivity and adaptability, do not find it illimitable, and the buffets of time and circumstance are no aid to an extension of military competence. " Novelties stab and inventions perplex: even the very language changes, and later they find that they live stigmatized in their own country."[1] After a limited number of years the inevitable changes of the military world are all irksome, and as life lengthens become repulsive. So, as the world moves onward, the old methods of military education are left further and further behind, and recourse is had to what may seem to be new-fangled ideas and methods. But the tragic mockery of Swift must be put aside. Suffice it to say that the idea that the multitudinous and changing problems which beset the modern soldier may be solved in a class room is a delusion. For there he learns the opinions of only one man, whereas in his unit in both the individual and the collective training seasons he is able to sift the opinions of many; enabling him to apply the cardinal principles of his profession with greater ease and facility to the situations with which he may be individually confronted in war.

[1] Lord Rosebery, " Rectorial Address," St. Andrews, 1911.

# NAVAL DISCIPLINE

By PAYMASTER-CAPTAIN H. MURRAY, D.S.O., R.N.

DISCIPLINE has probably been much in the minds of the authorities, and indeed of most thinking people, in recent times. What is discipline, and what is the special discipline which is the pride of the Navy and on which it is believed that our naval success has been established ?

All civilised life is disciplined. Every man, woman and child is subject to discipline all their lives. No one can escape it, because it is the essential part of the community life we live. In what way, therefore, does the discipline of the Service differ from that of life on shore. On shore, people, including the Service man, obey the laws of the Country, the by-laws of local authorities, or of the companies with which they may be associated in travelling, or working. There is " law " and " unwritten law," and both are generally understood and obeyed. They are obeyed because everyone knows that certain consequences or disabilities will follow if they are not obeyed, and if such disobedience is discovered. People also obey the law in order to keep their peace of mind. Most of us really fear the penalties we would incur if we were to commit murder, thieve, or even unnecessarily pull the communication chain in a railway carriage.

The Naval Discipline Act, which contains the special provisions or laws for the Navy, is really little more than the by-laws of any big company or firm employing a large number of hands. Most of the laws it contains are the obvious rules for people living in the close community of a ship, and there are, of course, others equally common-sense, which deal with conduct in action, etc. The fact that there are special laws for the Navy, which are in no sense harsh, does not therefore appear to account for the difference in the discipline of the Service from that of ordinary life.

Discipline is a word, the meaning of which is frequently misunderstood. People speak of a well-disciplined force, when they see a body of men marching in perfect order. This is a matter of drill, and has very little to do with discipline. A ballet may keep step and dance in perfect

order, and they would be called well drilled, not well disciplined. In a certain foreign navy the crew of a ship carried out drills most creditably one day and mutinied soon afterwards. Discipline as understood in the Service is the unquestioned obedience by a junior to the orders of a senior. In an age which has outgrown the traditions of Casabianca and the charge of the Light Brigade, it follows that orders must be capable of performance by the person to whom they are addressed, and must be clear, sensible, and reasonable, or they should not be given. The acceptance of this code in time of peace makes it suitably elastic for purposes of war, when the possibility of accomplishment of orders may be in doubt. In such cases, however, the necessity for the duty should be explained to those to whom the task is set. This not only facilitates its accomplishment, for it usually leaves a modicum of discretion to the persons carrying it out, but it also imposes a moral obligation to go on with the task until the ultimate aim is achieved.

Discipline of this nature may be sustained and maintained by several emotions, such as love or devotion—which includes patriotism, fear and respect. There are other emotions such as the sense of the necessity for co-operation and obedience to an appointed or obvious leader in the face of a common danger. Tradition plays a great part in sustaining the morale of a force in times of stress, but it is not considered to be of much account in everyday life. A spirit of emulation also plays a minor part in maintaining discipline, but this is a sporadic and evanescent emotion, on which it would be rash to put much trust.

Love and devotion are the emotions which chiefly maintain discipline in youth. They were important factors in by-gone ages. The devotion of the orderly who threw himself to death from an upper window at a word from his Emperor cannot be conceived to-day, but there is devotion to duty, that is to say insistence on seeing a thing through, which is one of the soundest attributes of our nation, and which facilitates the instilling of discipline into a British Service.

In former days, fear was the primary emotion which maintained discipline in the Navy, as the consequence of even small infractions of orders was corporal punishment, and discipline was, and probably had to be, largely maintained by brute force. In many cases, too, the men were not volunteers, but were pressed into the Service. The food and conditions of life were not as good as they might have been, and hardship was the common lot of the sailor. Respect was a secondary emotion, and was easy to maintain, as apart from the autocratic authority which they held, the officers, generally speaking, were educated, and the men were not. The officers were also socially and intellectually superior to the men, and were drawn mainly from a distinct ruling class.

The realisation of the necessity for co-operation and obedience in times of danger is an elementary emotion which has always accounted for disciplined behaviour in all walks of life, and this emotion as an element in the maintenance of discipline in the Navy can be disregarded for all practical purposes, as it will exist whatever the other conditions may be.

Fear, although it may to a great extent govern any community, and help to discipline a body of men, is not the emotion which to-day can maintain discipline, as the point may be reached when men realise that the justice of a case, and their united strength, will put them above the law, for they may have the sympathy of the majority of the people, and, ultimately, law is subject to the acquiescence of the majority of the people.

If, therefore, discipline in the Navy cannot be maintained by fear and the other emotions spoken of, it follows that it must be maintained by respect. The point thus arises, will a man respect an officer simply because he is an officer, and will a junior officer respect his senior simply because he is his senior? They may do so up to a point because all their early training teaches them this respect, but it is obvious that it will be easier to maintain discipline if the whole body of officers continues to be worthy of respect, because they are men of superior attainments, and their knowledge and authority are such that they indisputably possess the quality of command. Conditions of life have changed rapidly in recent years. Young people to-day are wont to think that they know better and do things better than their elders, and they are often right. Education, even of the limited kind given in the free schools, has altered altogether the outlook of the masses of the people. This education, to many, is just that little taste of the delectable which throws out of gear the acceptance of mundane things as right and proper. To a few the taste is an inspiration for self-advancement on the lines of higher education. Others know a little but think that they know all.

Thirty years ago it was by no means uncommon to find men on the lower deck who could neither read nor write, but to-day all are educated. It is of little use to blame education for such troubles as we may have, it is better to realise that our methods may need modification to bring them into line with the new conditions, and a great deal has, of course, been done in this respect, especially with regard to food and accommodation.

Apart from education it will be found that the wide social gulf which formerly divided officers and men has narrowed very considerably, and this tends to make it harder for officers to maintain their position of superiority. Respect, if it is to maintain discipline, cannot be confined

to the lower deck. Officers must respect their seniors. This does not mean to say that they do not do so now, but it is important because the men to some extent imbibe officers' opinions of others. The respect for officers must also continue to be maintained by the Administration, by the prevention of direct access to it from the lower deck, either through the Press or otherwise. Short-circuiting of officers would be wholly destructive of discipline, as it would inevitably lessen the respect in which they should be held.

The value to discipline and the maintenance of the authority of the command by the old system of conveying all Admiralty Orders through the Admiral has been to a great extent lost by modern methods of paper work. Wireless, too, must have had a bad effect on discipline, as nowadays a ship never seems to be "alone." The feeling that the Captain and officers control the destiny of the ship no longer exists to the same extent as formerly, and this tends inevitably to lessen the respect in which they are held by the men. There is, too, an inclination to let ceremonial customs of bygone days fall into disuse, though many officers strive to keep them alive. Some of these customs may appear out of place in modern conditions, but it is suggested that careful consideration should be given to any of them before they are dropped, as most of them aimed at emphasising the authority and position of officers.

Generally speaking, the men are anxious to uphold the position of the officers, and do so. This attitude will be maintained so long as the officers themselves respect one another, and are in turn respected and upheld by the Administration.

(NOTE.—*This article can with advantage be read in conjunction with that entitled "The Commander and His Officers," by the late Captain L. H. B. Bevan, R.N., published in the* JOURNAL *of November*, 1929, *p.* 721.—EDITOR.)

# "A FLIGHT TO ABYSSINIA"

By SQUADRON-LEADER J. L. VACHELL, M.C., R.A.F.

On Wednesday, 24th February, 1932.

THE RT. HON. SIR PHILIP SASSOON, Bart., P.C., G.B.E., C.M.G., M.P., in the Chair.

THE SECRETARY explained that the Under-Secretary of State for Air, Sir Philip Sassoon, had been detained at the House to answer Questions, but would arrive shortly.

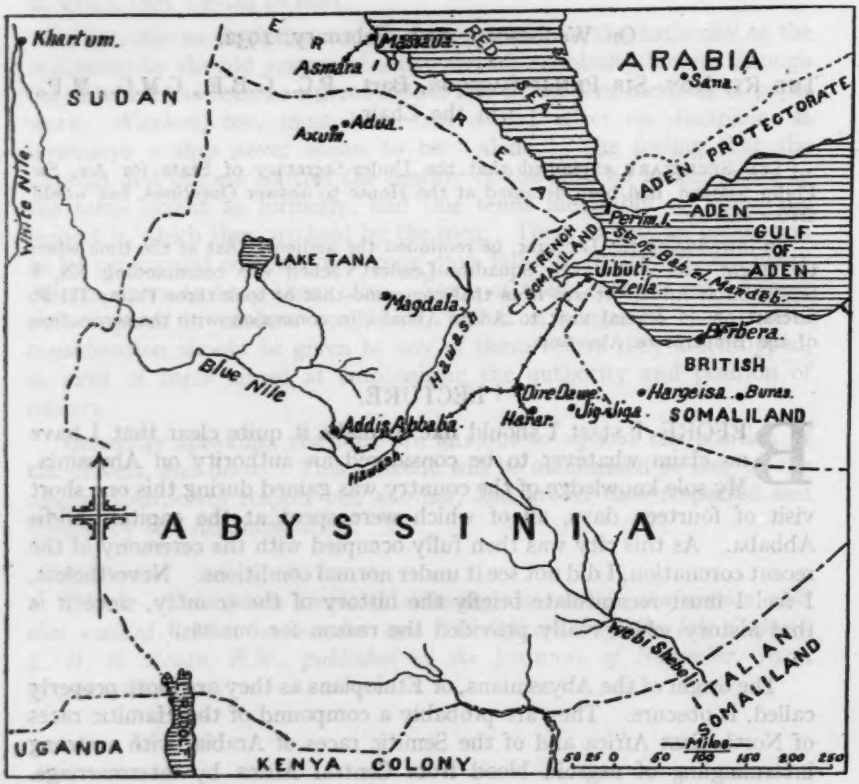
In introducing the Lecturer, he reminded the audience that at the time when this flight was undertaken Squadron-Leader Vachell was commanding No. 8 Squadron at Aden. It was from that command that he took three Fairey III F. aircraft on an official visit to Addis Abbaba in connexion with the coronation of the Emperor of Abyssinia.

## LECTURE.

BEFORE I start I should like to make it quite clear that I have no claim whatever to be considered an authority on Abyssinia. My sole knowledge of the country was gained during this one short visit of fourteen days, all of which were spent at the capital, Addis Abbaba. As this city was then fully occupied with the ceremony of the recent coronation, I did not see it under normal conditions. Nevertheless, I feel I must recapitulate briefly the history of the country, since it is that history which really provided the reason for our visit.

The origin of the Abyssinians, or Ethiopians as they are more properly called, is obscure. They are probably a compound of the Hamitic races of North East Africa and of the Semitic races of Arabia, with a strong intermingling of negroid blood from Central Africa by intermarriage. Their present ruler, H.M. Haile Selassie, Emperor of Ethiopia, Negus Negusta, King of Kings, Conquering Lion of Judah, the Elect of God—to give him his full title—claims direct descent from King Solomon and the Queen of Sheba. It will be remembered that the Bible records how the Queen, hearing of Solomon's fame, went to pay him a visit. She seems to have been right royally entertained, and in due course is supposed to have had a son by the King. The story goes on to relate

how she called that son Menelik, and later sent him back to Jerusalem to be educated. Whilst there as a lad, Menelik conceived the idea of carrying off the Ark of the Covenant containing the tablets of Moses. To allay suspicion, he substituted a counterfeit Ark, and then made off with the original. The fraud was discovered, and an army of horsemen was sent in pursuit of him. But, just as the party was on the point of capture, the earth opened up and gave them a safe passage under




the Red Sea. Their luck, however, did not hold, for as they were emerging on the other side, the earth closed up again and entrapped the Ark, which, to this day, the Abyssinians believe is buried somewhere near Axum.

Much of all this early history is naturally pure guesswork, but there are one or two events worthy of mention. It is on record that in the reign of King Aeizanes, in 320 A.D., the country was converted to

Christianity, and the Abyssinians still retain an intense devotion to their religion. At least one-third of the land is now owned by the churches, and Abyssinia is perhaps the most priest-ridden country in the world, a condition which constitutes a serious drawback to progress.

In the early days of Islam, about 600 A.D., the followers of Mahomet fled from Mecca to Abyssinia to escape persecution. The commentaries to the Koran state that the Prophet, in recognition of the Abyssinians' kindness, left instructions that their country was not to be assailed, so that for a number of years, while neighbouring territories were being ravaged by Moslem invasions, Abyssinia seems to have escaped. But from about 1250 A.D. onwards it was attacked continuously; the whole of the seaboard was captured, and down to this day the Eastern and Southern parts of the country inhabited by the Ogaden Somalis, and, I think, the Danakil, are Moslem, while the ancient walled town of Harrar is, in external appearance, just like one of the cities of Southern Arabia.

At the beginning of the XVIth century, with the help of the Turks, large areas of the interior were occupied by the Moslems, and the invasion was only repelled with the assistance of a Christian mission under Cristofero da Gama, a brother of the great Portuguese explorer.

No sooner was the Turkish invasion repelled than the Galla swarmed into the country from the South-East and occupied large tracts of it. They were not finally subdued until the reign of Menelik II at the end of last century. At the same time as the Galla invasion the country was torn by incessant civil strife. Emperors of the royal line were duly appointed, and as regularly deposed or poisoned, until the monarchy lost all real power, and the country became split up into the separate kingdoms of Gojam, Tigre, Amhara and Shoa, each possessing very indefinite borders. There had been peaceful penetration by Portuguese Jesuits, who have left their mark in a number of beautiful monuments and ruined churches; but their attempts to convert the country to their own form of Christianity led to their final expulsion at the end of the XVIIth century. Treaties were made by some of the many rulers with Great Britain and France about the middle of the XIXth century, but there was scarcely any contact with the outside world until the reign of the Emperor Theodore.

Theodore, whose original name was Kassa, was born in humble circumstances, but formed a band of free companions with whom he gradually subdued the whole country. He carried off into captivity the son of the King of Shoa, who later was to become Menelik II, Abyssinia's great ruler, and had himself crowned Emperor of Ethiopia at Axum in 1855. After his amazing conquest, Theodore rapidly went to the bad. His subsequent misrule, immorality, cruelty, and drunkenness caused

whole districts to revolt, and eventually brought down the wrath of Great Britain for his ill-treatment of British missionaries. This incident led to Lord Napier's expedition, which captured Magdala in 1867, and was followed by Theodore's suicide.

Theodore was succeeded by Ras Karsa of Tigre, who had helped the British. He gradually subdued the country and was crowned Emperor under the name of John in 1872.[1] John was forced to admit the existence of two kingdoms Shoa and Gojam within his own, but, on his death, Menelik, who had escaped from captivity and become King of Shoa, claimed the whole Empire for himself. In 1889 he was crowned Emperor of Ethiopia at Entoto, now called Addis Abbaba. It was Menelik who first created Abyssinia as it is to-day. He consolidated the various kingdoms which comprise the Empire, subdued the Gallas in the South-East, and thus almost doubled its size. He also introduced a number of European ideas, and ordered the construction of a railway linking Addis Abbaba with Djibouti on the coast. The outstanding event of his reign, however, was the defeat of the Italian invasion at Adowa in 1896. Foreign missions then poured into the country, and most of the Great Powers established legations at Addis Abbaba.

Unfortunately, Menelik had a paralytic stroke in 1908, and the country was ruled by a council of Ministers until his death was announced in 1913, when his grandson, Lej Yasu became Emperor. Lej Yasu, then a mere youth, got into bad hands and intrigued with the Turks and the Mad Mullah of Somaliland; finally he openly embraced Islam. This caused a revolution in 1916, when he was deposed; his aunt Zauditu, the younger daughter of Menelik, became Empress, with Ras Tafari, great grandson of Menelik's father, as regent and heir-apparent. For some years there was a good deal of friction. The Rases, or hereditary rulers of provinces had, under Lej Yasu's misrule, regained much of the power which had been taken from them by Menelik. The Empress represented the conservative party, which was supported by the very powerful church, and was bitterly opposed to all innovations, particularly to anything which savoured of foreign influence. On the other hand, the Regent was essentially progressive in his ideas. Gradually Ras Tafari got the upper hand, and in 1918 the completion of the railway to Addis Abbaba formed a link with the outside world, which stimulated intercourse with Europe. A state school and state hospital were opened, and in 1922 Ras Tafari's position had become sufficiently secure to permit him to leave the country on a short visit to Aden;

[1] This habit of changing the King's name at his coronation adds to the difficulty of following Abyssinian history.

in 1924 he even made an extensive tour of the principal capitals of Europe. Meanwhile, in 1923, Abyssinia was admitted a member of the League of Nations, subject to certain undertakings as regards slavery and the traffic in arms.

The Empress died in 1929, and the conservative party, led by some of the Rases in the North, raised the standard of revolt, but received less support than had been expected so that the rebellion was quelled fairly easily. Arrangements were made to crown Ras Tafari Emperor in the following year.

During his visit to Europe, Ras Tafari had bought French and German aircraft, and considered that one of the latter had been of great assistance in putting down the rebellion. Although he had been much impressed by the air display arranged for him at Croydon, he did not purchase any British aircraft ; I believe this was not allowed until the Arms Traffic Convention had been ratified.

Sir Sidney Barton, our Minister at Addis Abbaba, considered that it would add a great deal to British prestige if some of our aircraft could visit the capital on the occasion of the coronation. The Air Ministry concurred in the acceptance of such an invitation provided that no risks were attached, for at that time very little was known about flying conditions at Addis Abbaba. I was acting as commanding officer of the forces at Aden, at the time, and was ordered to send an officer to that city to look at the racecourse, which had been used as a landing ground, and if it were unsuitable, to reconnoitre an alternative site.

This officer's report was that the racecourse was quite large, but surrounded by tall trees and covered with long grass. He was told that the grass would be cut, but that the surface was bound to remain rather rough, and would slow down the run of an aircraft when trying to get off. The German Junkers aircraft had never got off there with a full load, and though we thought there would be little risk for our Fairey III F., we could not be absolutely certain of being able to do so, since nobody knew definitely what length of run that aircraft would require on a landing ground situated at 8,500 feet above sea level. The more rarified air at that altitude must, of course, reduce the efficiency of an airscrew designed to give its maximum effect at a much lower altitude. Further, the date of the coronation had been fixed to allow only a sufficient interval to elapse after the rainy season, to enable the resulting ravages to be repaired. The rains at Addis Abbaba last from June till September ; they are so heavy that the few roads are washed away and the whole country is reduced to the consistency of a snipe bog. The inspection of the landing ground had to be made just after the rains, so that it was impossible for the officer

to get about the country and look for alternative sites. These facts were reported to the Air Ministry, who eventually decided that the visit should take place.

In the meantime it was clearly desirable that, if we went, we should be able to take off from Addis Abbaba as lightly loaded as possible, which meant that we should require some refuelling station near that place. The only possibility seemed to be Jig Jiga, just across the frontier from British Somaliland and about 300 miles East of Addis Abbaba, where we had heard that there was a landing ground being used to train the newly-formed Ethiopian air force. With Sir Sidney Barton's permission, I flew over to inspect it and made the necessary arrangements.

We had intended to time our arrival at Addis Abbaba to coincide as nearly as possible with that of H.R.H. the Duke of Gloucester, who was travelling by train, and we hoped to escort him into the capital. The train was due at 3 p.m. on 28th October, 1930, but at the last moment the Abyssinian authorities advanced the time of arrival by some hours as they required the same train to bring up the Italian mission. Owing to poor communications it would have taken some time to alter our arrangements for refuelling and so forth; accordingly we adhered to our original programme.

The flight of three aircraft, each piloted by an officer with an airman as crew, left Aden on the morning of 27th October. We followed the usual route to Somaliland, flying West along the coast for a hundred miles to Perim, where we crossed the Straits of Bab El Mandeb to the African shore. Then we turned South for about thirty miles before cutting across the Gulf of Djibouti to the port of that name in French Somaliland, which is the terminus of the railway to Addis Abbaba. Just South of Djibouti we passed Zeila, the most northerly settlement in British Somaliland, and continued down the coast to Berbera, the chief and in fact the only real harbour in that country. From Berbera we turned inland and climbed up over the hills, passing over Sheik, which is the seat of Government and situated on the hills at a height of 4,500 feet. After about four-and-a-half hours flying, we reached Burao, the headquarters of the Somaliland Camel Corps, where the squadron at Aden maintains two aircraft to help in controlling the country.

We left at 7.30 the next morning, and flew via Hargeisa to Jig Jiga. Hargeisa is the headquarters of one of the District Commissioners, and one company of the Camel Corps is normally stationed there. It is situated at a height of about 4,000 feet, and the numerous trees and flowers make it a very pleasant oasis in a desert of scrub. Somaliland generally is a barren waste covered in most parts by thorn bushes ten

to twelve feet high, and dotted with ant-heaps. The country is entirely featureless, and even the watercourses are dry except in the rains; it is, therefore, necessary to follow the tracks very closely. A motor road runs from Berbera to both Burao and Hargeisa, and the track from Burao to Hargeisa is often used by motor cars, and so is fairly easy to follow from the air.

From Hargeisa there were rather a confusing number of tracks running roughly in the direction of Jig Jiga, but I had proved on my last visit that the map was quite accurate and our compass course took us direct to the place. About half-way between Hargeisa and Jig Jiga, somewhere near the frontier, which is very indefinite, the country changes abruptly from the scrub-covered plain to rolling grass land, somewhat reminiscent of Salisbury Plain.

Jig Jiga, lying at the foot of the Goreis range of mountains, showed up plainly from some distance away as a fair-sized village of light coloured mud buildings. Our visit created great excitement, and there was a very big crowd at the landing ground, where we were met by Captain Long, the British Consul, and various notables. After refuelling the aircraft, we left at midday for Addis Abbaba, about three hundred miles away. As there was a light following wind we expected to take about three hours to get there. On leaving Jig Jiga the Goreis range of mountains, about 9,500 feet high, was crossed, and after half an hour's flying we passed the Haramaia lakes, a good landmark. Shortly afterwards I caught a glimpse of the walled city of Harar away to our left. The country here seemed to be fertile and well cultivated on a system of terraced fields, similar to Southern Arabia. Soon afterwards I spotted Dire Dawe away on our right. This is a fair-sized town built on both banks of a dry wadi bed, and the first night of the train journey from Djibouti to Addis Abbaba, which normally takes three days, is spent there. A few miles West of Dire Dawe we picked up the railway, and followed it to our destination. The nature of the country changed abruptly and for the next hundred miles was a barren scrub-covered waste similar to Somaliland. This area is inhabited by the Danakil, a lawless tribe, over whom the Government have no control, although nowadays they do not interfere with the railway. The next feature of interest was the town of Hawash, where the second night of the train journey is spent, and just East of the town the railway crosses a gorge by quite a fine bridge. Beyond Hawash the Metahara lakes were passed, and from here the ground gradually rises and again becomes fertile.

Addis Abbaba could be seen from some distance away; it is a large straggling town which appears to have been built in a forest, though in fact the trees are blue gums which were planted quite recently. Before

the Emperor Menelik came to the throne no fixed seat of government existed; the ruler and his court remained in one place only so long as the timber lasted. With the arrival of the various foreign missions, however, this proved most inconvenient. Menelik liked the slopes of the Entoto mountain, so he not only forbad the felling of trees, but made his subjects plant numbers of the fast-growing gum, of which there are now far too many for convenience.

There was no difficulty in locating the racecourse, where a ground sign had been put out to show the direction of the wind. Thousands of people had collected round it, but the police control was excellent and the landing space was kept absolutely clear, so that we landed without difficulty. I was told by Sir Sidney Barton, who met us, that nobody had expected us to arrive up to time; otherwise the crowd would have been far greater. We were actually over Addis Abbaba a few minutes before three o'clock, the stipulated hour. Never before had aircraft arrived within hours of the time when they were due; on very few occasions had they even managed to get there on the appointed day.

We parked our aeroplanes beside tents which had been erected on the racecourse for the men, and expected to go into the camp in the grounds of the Legation, which had been arranged for the British official visitors. But a few days before we arrived the King had said that the officers were to be his guests, and he would not allow us to go into the Legation camp. Consequently, the house of one of the British residents, situated most conveniently close to the racecourse, had been reserved for us, and we lived there with Sir Percival Phillips, the *Daily Mail* correspondent, and Count Marazanni of the Italian Air Force, who had come out with a Breda light aeroplane as a present from his Government.

For the first couple of days of our visit, the roads were thronged by Abyssinians making their way into the capital. The Abyssinian rides and is accompanied by a following of slaves on foot, the number varying in accordance with his importance. They all wear similar clothes, which comprise tightly fitting pyjama trousers, a long tunic shirt and a white chamma or shawl of finely woven cotton. Sometimes they wear a dark coloured cape of rough blanket material. There is no national head-dress, but the more important citizens have adopted the solar topi or Homburg of American pattern, which looks somewhat incongruous. The women are dressed like the men but wear long skirts, and their mode of transport is similar, for there are no roads outside the capital, and wheeled transport is unknown. Quite good roads had been constructed in Addis Abbaba for the coronation, and there were numbers of motor cars and taxis in use.

The first function we attended was the unveiling of the Menelik memorial statue in the square near St. George's Cathedral. Stands had been erected all round the square, and there was a very large and most orderly crowd. The streets were lined by police and soldiers, and the traffic control was excellent. Near the King, in the centre, were the foreign missions, some of them in top hats and morning coats, while others were in military or diplomatic full dress. The Ethiopian Ministers wore black cloaks with embroidery over their white shirts and tight-fitting white pyjama trousers, while amongst them were the high army officials with their gold embroidered lion skin capes and fine head-dresses, chiefly composed of lions' manes.

Addis Abbaba was the most amazing mixture of modern ideas, imported from Europe, and scenes of feudalism which might have stepped straight out of a book depicting episodes of medieval times. For instance, while driving in a taxi along quite a respectable street with uniformed police on point duty, it was not uncommon to see two persons walking along in chains. These were merely debtor and creditor, who remain chained together until the debt is discharged. I regret I could not obtain a photograph of this practice, nor of the raw meat feasts to which no European was admitted. When one day we lunched at the Palace, and there was a plentiful display of gold plate, excellent cut glass, and fine table linen. On the previous day the Emperor had been entertaining his warriors in a hall nearby, where some thousand of them sat in rows with a low table between them while servants carried in freshly-slaughtered uncooked carcases on poles, and each man cut off his own portion as they passed.

One day there was a State procession through the streets, and on another a review of the army in a huge amphitheatre near the railway station. The army is just as curious a mixture as everything else we saw. Part of it which comes from the Emperor's own provinces such as Shoa, Harar, and Jig Jiga, to which Governors are appointed, wears khaki uniform and is armed and equipped like European soldiery; it is being trained by Belgian and Swiss officers. The remainder, which comes from the feudal States, governed by some of the Rases, is merely a mob of men armed with rifles. In fact everyone in the country seems to carry a rifle of sorts, and most of the men have shields and spears as well. Some of the warriors are magnificently dressed. During the review of the army, the Emperor sat at the top of a small hill overlooking the arena, and, in the intervals while the troops were marching past, small parties of about fifty of these warriors, mounted and on foot, dashed up the slope and declaimed their deeds of valour and made their petitions, all shouting together at the top of their voices. At

first it was rather alarming, especially as I was told that one hero boasted of having killed ten black men and now begged the Emperor's permission to kill a white one.

Unfortunately, we missed the coronation ceremony, as the King asked that our aircraft should form an escort on his return journey from the Cathedral to the Palace. But we were rewarded by getting some quite good pictures of the event.

One day there was a race meeting, and on his way to the course the Emperor came to inspect our aircraft. He mounted a platform erected beside one of them so that he could look into the cockpit, and, through M. Zaphiro, the Foreign Secretary to the British Legation, asked a number of questions which showed that he knew what he was talking about. He is very proud of his own air force, which is at present run by Frenchmen. It consists of six Potez single-engined bombers, one Morane cabin monoplane, presented by the French Government, and the Breda light aeroplane presented by the Italians. I gathered, however, from M. Corriget, who is in charge of the force, that the Emperor has no idea of the organization required to keep aircraft in the air, and there are scarcely any spare parts in the country, so that the activities of these aircraft are likely to be quite short-lived.

Almost every night during our stay there was either a banquet at the Palace or a dinner and reception at one of the Legations, so that we had a most interesting and amusing time. A number of the members of the other Missions talked English very well, and most of the functions seemed to go with quite a good swing, but the effort of keeping up a conversation during lengthy meals with Abyssinians possessing a knowledge of French as rudimentary as our own was considerable.

There is little to relate about our return journey. For the flights at Addis Abbaba we had lightened the aircraft as much as possible, and carried less than an hour's petrol. But Jig Jiga was three hundred miles away, and in still air we should require petrol for at least three-and-a-half hours to give us a safe margin. We debated whether we should start early in the morning, when there would probably be no wind, or wait till later in the day, when we were sure to have a South-Easterly breeze to help us to get off more quickly. The latter course, however, would very likely have meant a head wind all the way to Jig Jiga, and a greater safety margin of petrol would have had to be taken. We took no kit, tools, or spares of any sort, and leaving behind the drinking water and rations which are normally carried out East in case of a forced landing, left Addis Abbaba at 7.30 on the morning of 10th November.

I got off without difficulty, and was much relieved to see the other two aircraft safely in the air behind me. Coming up we had more or less followed the railway, but now I knew my map to be accurate and so took a direct compass course. In spite of a slight head wind, instead of the following one which had helped us on the way up, we reached Jig Jiga in three hours, and each had well over half-an-hour's petrol to spare. After refuelling and filling up our drinking water tanks, we left for Aden. This time we steered direct for Djibouti, and flying thence via the Straits of Bab el Mandeb reached Aden at 4.45 p.m.

It may be asked why Britain and other Great Powers took so much interest in the coronation of the ruler of Abyssinia. Britain and Italy, indeed, were each represented by a Prince of the Royal blood; France sent Marshal Franchet d'Esperey, while America, Belgium, Germany, Sweden, Egypt, all sent distinguished representatives to the ceremony. I will try to give the answer which, as far as I can remember it, Sir Sidney Barton gave at Addis Abbaba. No country can nowadays afford to neglect a potential market for its goods, and Abyssinia, though at present undeveloped, offers remarkable possibilities for trade. All countries are, therefore, interested in her development, and particularly Italy, France and Great Britain, by whose territories she is surrounded.

Italy's colony of Eritrea lies to the North East. It is for the most part low-lying, barren, and unhealthy, and with her need for territorial expansion for her ever-growing population, she cannot but be deeply interested in this undeveloped but fertile country, with its perfect white man's climate just across the border. It is not suggested that Italy has at present any project for territorial expansion in that direction, but, if any break-up of Abyssinia were to come about, she would certainly consider she had as good, if not a better, right to intervene as any other nation. Italy, too, has offered Abyssinia special facilities at the port of Asab; she would like the country to be developed, and to build a road or railway to tap the produce of the Northern part through Eritrea.

France, I believe, holds a controlling interest in the railway from Addis Abbaba, the terminus of which is the port of Djibouti in French Somaliland, and thus controls by far the greater part of the trade of the country. There are already a great number of French residents in Abyssinia. They own the hotels, a number of the shops and trading concerns; after Amharic, French is the most commonly spoken language. I understand, too, that the French have recently obtained a controlling interest in the Bank of Abyssinia, a business founded by Lord Cromer as an offshoot of the Bank of Egypt and hitherto run by British officials. As the trade of Abyssinia has, up to the present, been negligible, this bank had never been a very prosperous concern, so the British share-

holders raised no objection when the King expressed the wish that it should be taken over by the State. Abyssinia managed to produce enough money to compensate the shareholders, but was unable to provide the additional sum required as working capital. I understand that France has recently provided that capital, so that she now has this additional stake in the country.

Our interests are somewhat different. Abyssinia is surrounded on three sides by British territory: on the East by Somaliland, on the South by Kenya and Uganda, and on the West by the Sudan. We are, therefore, deeply interested in Abyssinia's future, would be glad to see her development, and are anxious to encourage trade with her through our various colonies. There is also the project of damming the upper waters of the Blue Nile, whose source is Lake Tana in Abyssinia. If these waters were controlled, a far larger area in the Sudan could be placed under cultivation. The route from Addis Abbaba to the lake has recently been surveyed by the White Corporation of America, and I understand the project is likely to go forward.

As to the future of Abyssinia, my opinion is based merely on what could be gleaned during this short visit. The country is wonderfully fertile and, varying in height as it does from sea level to the highland plateau of over 8,000 feet, can, in some part or another, produce practically anything. It has a very heavy rainfall for three months in the year, but at other times the climate in the highlands is perfect. In October and November, when we were there, it was about as warm as the hottest day of a fine summer in England, while as soon as the sun had gone down one was glad of a fire in the room. In addition to the possibilities of agriculture, there are supposed to be valuable mineral deposits in the country. Abyssinia thus appears to have infinite potentialities, and she now has a very progressive monarch. There are, however, great difficulties to be overcome. The people are quite illiterate; very few of them can read or write. They are deeply prejudiced against all foreigners, and in this they are strongly supported by the priests who are very numerous and extraordinarily powerful. This makes it very difficult for foreigners to obtain any concessions which would make it worth while investing money in the country. There are also a number of minor difficulties to be faced before any real progress could be made. Nevertheless, in spite of his handicap of lack of revenue, the present Emperor has already done a great deal, and it is possible that this Christian state, which has retained its integrity from the days of our early history, may yet occupy a prominent position in the world.

There was no discussion.

THE CHAIRMAN:

The Lecturer has chosen as the subject of his lecture one of the few countries still left in the world around which an atmosphere of romance still clings. It is, nevertheless, a country which is awakening to new conditions and responding to the influence of modern ideas, as we have heard this afternoon. It has already played a part in the history of the British Empire, and its many points of contact with us make it more and more important that our relations with Abyssinia should continue and improve so long as this process of modernisation continues to progress. At this moment arrangements are being made for the delimitation of the frontier between British Somaliland and Abyssinia, and that this should be done this year. Aircraft will surely play a very important part in the mapping and fixing of that frontier. There can be no doubt, therefore, of the great importance of improving our own knowledge of the habits and capabilities of the people of Abyssinia, and also of the characteristics and resources of the country itself. It is quite evident that the Lecturer made full use of a unique chance, and has thus been able to give a clear and delightful account of a journey and of an occasion of quite unusual and exceptional interest.

The customary votes of thanks to the Lecturer and Chairman were carried by acclamation.

# TANKS AND INFANTRY IN THE ATTACK IN MOBILE WARFARE

By "FORWARD."

IN the course of tactical exercises held without troops, it frequently occurs that Royal Tank Corps officers are asked to express an opinion as to the best methods of combining the action of tanks with that of infantry in the attack; but some of the more junior of these officers, at any rate, have no experience of, and possibly no ideas on, such co-operation. This is inevitable since training has lately been confined to the action of tanks operating independently, as was the case with the 1st Brigade, Royal Tank Corps, during 1931. There is, therefore, a real necessity to establish some common basis for the expression of opinions on this subject. It is with that object in view that the following remarks are put forward. The methods recommended must necessarily, however, be to a certain extent the outcome of personal views and peace experience, and in consequence must not be regarded as in any way representing official opinion.

To begin with, in mobile warfare there are, broadly speaking, three main ways in which tanks can co-operate with and assist infantry. These are:—

(i) By attacking the same objective and on the same line of advance as the infantry, either preceding them all the way, or starting after they have commenced their advance and then passing through them.

(ii) By attacking the same objective as the infantry, but advancing either obliquely or at right angles to their line of advance, thus taking the enemy position in enfilade or flank.

(iii) By making a wide turning movement and threatening the enemy's rear, thereby causing him, either by moral effect or by offensive action, to give way and by that means assisting or co-operating with the infantry.

In both (i) and (ii) the co-operation between the tanks and the infantry is close co-operation, and it is the duty of the tanks to drive

the enemy from the objective and hold that objective until relieved by the infantry. It is with these two types of attack that I shall now deal. The third category is the type of independent tank action, which was the subject of the training of the 1st Brigade, Royal Tank Corps, during last season, and this does not call for comment in this article.

Probably the first questions that an infantry officer will ask are: "What type of tanks may we expect to co-operate with us?" and "What is to be the organization of the unit?" At the moment these queries are not easy to answer; but it will simplify matters if we make certain assumptions, for which in mobile warfare there is, I hope, sufficient justification. In the first place we will assume that the tanks available for co-operation with infantry will probably be light tanks with close support tanks, or a combination of medium and light tanks with close support tanks. The question of organization is not really of great importance provided that the attacking tanks available are used as a whole and not in *petits paquets*; and that they are divided into "advanced tanks," "main body," or "striking force," and "reserves"; e.g., in the case of a mixed battalion, the "advanced tanks" would be the light tanks of attacking companies, the "striking force" would be the medium tanks of attacking companies, and the "reserves" would be the reserve companies.

Having made the above assumptions, I will now proceed to deal with the action of tanks in close co-operation with infantry in attacks as already described.

## GENERAL ACTION OF TANKS IN ATTACK.

The pamphlet on "Training and Handling of Tank Battalions, 1931," states:—

"Whether the enemy are on the move or stationary, the guiding principle in the handling of mixed tank battalions is the handling of their light and close support tanks to neutralize the enemy's anti-tank defence and so allow the medium tanks to destroy the enemy by fire and shock action.

"The role of the light tanks is:—

(i) To precede the medium tanks, locate and neutralize the enemy's anti-tank defence, until the arrival of the medium tanks, and to act as ground scouts;

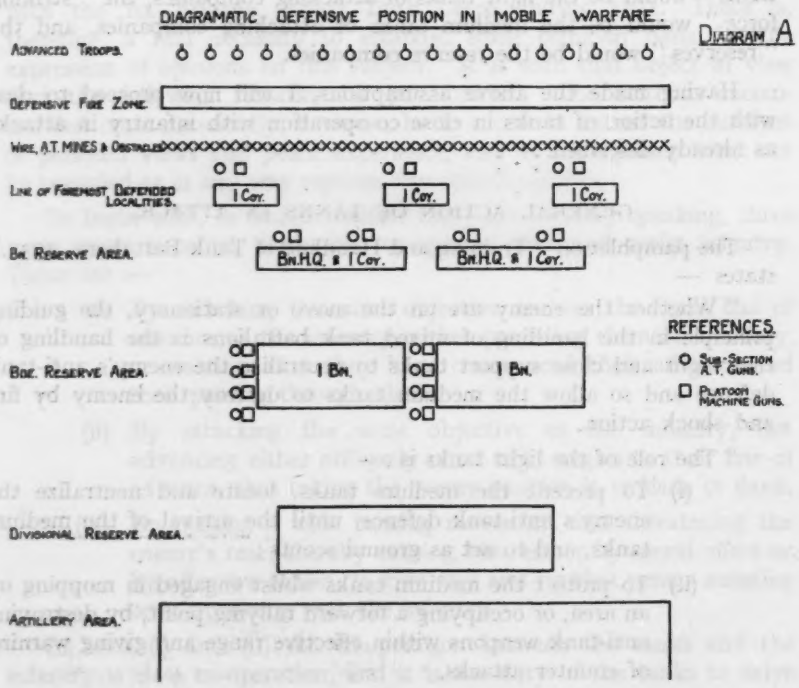
(ii) To protect the medium tanks whilst engaged in mopping up an area, or occupying a forward rallying point, by destroying anti-tank weapons within effective range and giving warning of counter attacks.

"The role of the medium tanks is the assault of the objective and the destruction of the enemy by fire and shock action in that area. The role of the close support tanks is to co-operate with the light tanks in protecting the medium tanks from the enemy's anti-tank weapons. They are especially valuable for neutralizing with a smoke screen anti-tank weapons on the flank of the attack."

It must be borne in mind that, in the event of light tanks being employed without medium tanks, the role of the light tanks mentioned above devolves on the "advanced light tanks"; the role of the medium tanks mentioned above devolves on the "striking force" light tanks, while the role of the close support tanks is to protect the "striking force" light tanks from the enemy's anti-tank weapons.

## PROBABLE OPPOSITION TO FRONTAL ATTACK BY TANKS.

Assuming the enemy to have been in position for not more than forty-eight hours, his defences from front to rear will probably consist of the following :—



*Advanced troops.*—These may or may not have been driven in before the tank attack starts. In any case, as visualized in Infantry Training, Vol. II, 1931, they will not have anti-tank weapons.

*Defensive fire zone.*—This is the area covered by fire, which will be put down by the defender's artillery in response to " repulse of attack " calls being received, as close to the general line of foremost defended localities as considerations of safety permit. This artillery fire will be co-ordinated with the fire of the machine guns along the front.

Infantry Training, Vol. II, 1931, Chap. III, Sec. 21, para. 11, states :— " In mobile operations, the artillery of the defence will seldom be strong enough to put down a curtain of fire along the whole front. . . . The artillery will therefore normally be employed to search certain definite lines of approach, which it is anticipated the enemy will use and which cannot readily be dealt with by fire from rifles or automatic weapons."

*Wire.*—The amount of wire which may be encountered depends on the time the enemy has been in position, the stock available and the nature of the soil. In any case, the enemy will have put up defensive wire to cover gaps not so covered by the fire plan of his machine guns and artillery.

*A.T. mines and obstacles.*—Infantry Training, Vol. II, Chap. III, Sec. 21, para. 12, states :—" The arrangements made for anti-tank defence will include the full use of natural and/or artificial obstacles, mines, battalion anti-tank weapons and possibly light artillery."

*General line of foremost defended localities.*

(i) Anti-tank guns. On the front of each battalion in the defence there may be, in the defended locality held by each forward rifle company, two anti-tank guns; in the locality of the reserve rifle company two anti-tank guns; and with battalion headquarters two anti-tank guns.

(ii) Machine guns. In the area of each battalion in the defence, there will be sixteen machine guns, of which possibly four guns will be in the area of each rifle company.

Infantry Training, Vol. II, Chap. III, Sec. 21, para. 14 (ii) states :— " Full use should be made of the mobility of the anti-tank guns. Alternative positions should be reconnoitred for forward and reserve guns; the guns themselves should be kept mobile and under cover; they should be committed to fixed positions only when the ground restricts enemy tanks to definite avenues of approach."

*Reserve areas.*—(*a*) Brigade reserve eight anti-tank guns per battalion.

(*b*) Divisional reserve thirty-two anti-tank guns per brigade.

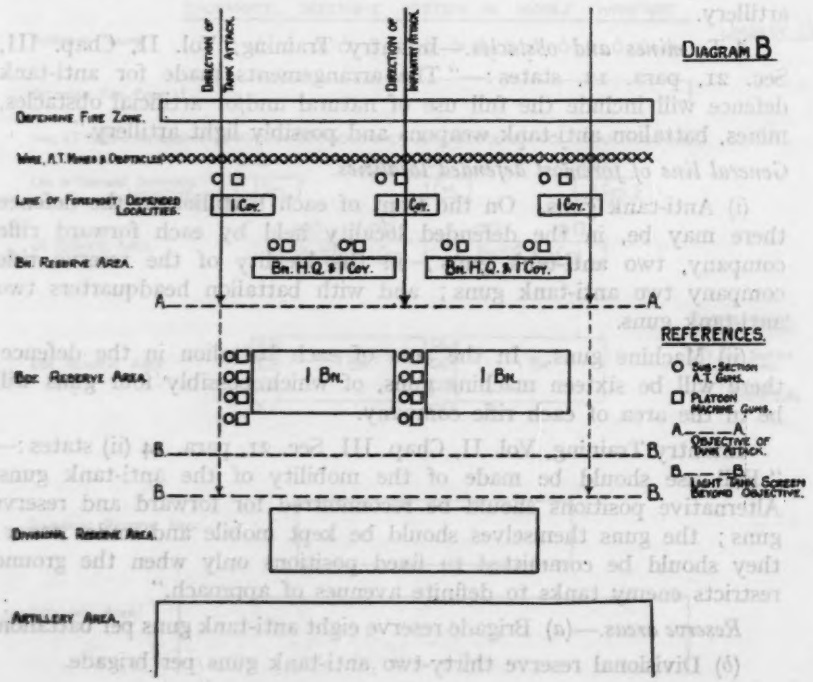
*Artillery areas.*—(*a*) About 1,500 yards behind the line of foremost defended localities, there may be the close support light artillery of the defence. It is more probable that the light artillery will be on wheels, ready for close support of counter-attacks.

(*b*) About 2,500 to 3,000 yards behind the line of foremost defended localities will be the remainder of the divisional artillery; and some distance further away, as ground or situation permits, perhaps some medium artillery from the Corps.

*Tanks.*—If the enemy has tanks, they will be in suitable concealed positions about 800 to 1,000 yards in rear of the line of foremost defended localities.

## ATTACK OF TANKS AND INFANTRY ON THE SAME OBJECTIVE AND ON THE SAME LINE OF APPROACH.

Assuming that the tanks carrying out the attack are mixed, i.e., light and medium tanks with close support tanks, I will deal first of all with an attack of the above nature.



*Starting time.*—The tanks will start from some suitable starting line, either behind, level with, or in front of the infantry, zero hour for the tank attack being arranged to fulfil the following condition, if possible.

On the assumption that the pace of the tank attack is 300 yards per minute, and the pace of the infantry advance is 50 yards per minute, the tanks should start at such time as to bring the medium, or striking force, tanks on to the objective as short a time as possible—preferably not more than ten minutes—before the infantry; the reason for this being that it is undesirable that medium tanks should expose themselves to enemy artillery, while waiting to be relieved by the infantry, for longer than can be avoided.

*Frontage and depth.*—In order to establish some data for calculating the frontage and depth of an attack by a mixed force of tanks, it may be assumed from recent experience that a section of five medium tanks can be effectively controlled on a frontage of 200 to 300 yards and that a section of seven light tanks protecting such a medium section would advance on a frontage approximately double that of the medium tanks, i.e., 400 to 600 yards. The distance from front to rear of such a combination would be some 600 to 800 yards. If greater depth than this is employed, difficulties arise over communication, and touch between the two sections is liable to be lost.

*Method of attack.*—As already shown, the first opposition to be met, assuming that the enemy's advanced troops have withdrawn, is the "counter-preparation" and "defensive" fire of the hostile artillery. This opposition must be dealt with by "counter-battery" fire of our own artillery and by the mobility of the tanks themselves.

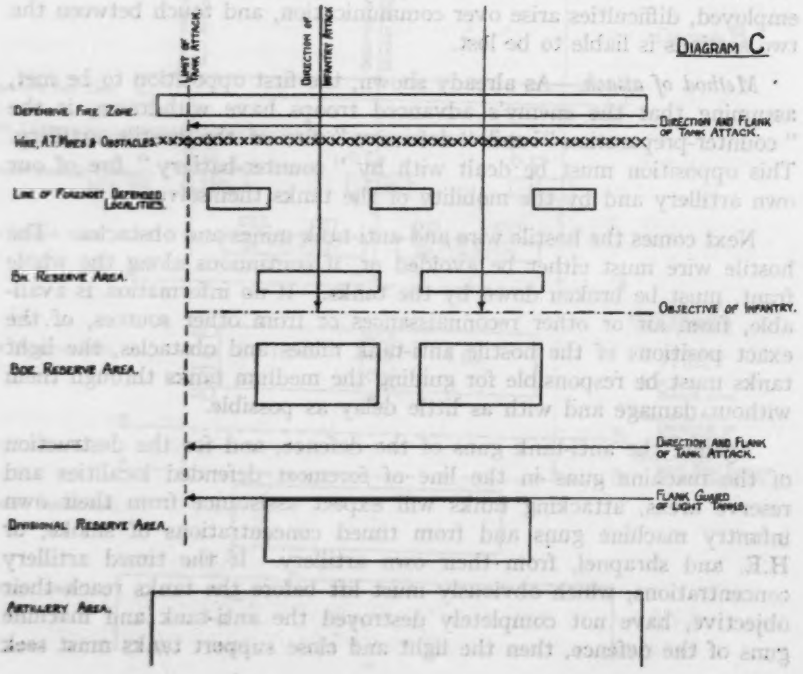
Next comes the hostile wire and anti-tank mines and obstacles. The hostile wire must either be avoided or, if continuous along the whole front, must be broken down by the tanks. If no information is available, from air or other reconnaissances or from other sources, of the exact positions of the hostile anti-tank mines and obstacles, the light tanks must be responsible for guiding the medium tanks through them without damage and with as little delay as possible.

Against the anti-tank guns of the defence, and for the destruction of the machine guns in the line of foremost defended localities and reserve areas, attacking tanks will expect assistance from their own infantry machine guns and from timed concentrations of smoke, or H.E. and shrapnel, from their own artillery. If the timed artillery concentrations, which obviously must lift before the tanks reach their objective, have not completely destroyed the anti-tank and machine guns of the defence, then the light and close support tanks must seek

out and destroy or blind the anti-tank guns, and thus free as many as possible, if not all, of the medium tanks to deal with the machine guns, unhampered by the need for dealing with hostile anti-tank fire.

The light tanks, with some close support tanks, will continue to advance some 600 to 800 yards beyond the objective of the attack and will deal with all anti-tank and machine guns in the area of their advance. They will remain there in observation until relieved by infantry. The medium tanks will not advance beyond the objective, will mop up all resistance there and will remain there until relieved by the infantry. On being relieved, the medium tanks will withdraw to a rallying point close up to the captured position; the light tanks will remain out in observation, until they in their turn are relieved by the infantry exploitation detachments, when they will join the medium tanks at the rallying point, leaving out one or two sub-sections of light tanks in observation in the infantry position ready to give warning by radio-telephony to the tanks of enemy counter-attack.

TANK ATTACK AT RIGHT ANGLES OR OBLIQUE TO INFANTRY ADVANCE.



*Starting time.*—It may be necessary, since the advance of the tanks may not assist the infantry to move forward until the tanks actually reach the flank of the objective, for the tanks to remain on the objective before being relieved by the infantry, somewhat longer than in a frontal attack. The starting time for the tank attack will not, therefore, be so dependent on the distance of the infantry from the objective as is the case with a frontal attack.

*Frontage and depth.*—The frontage of the tank attack will depend on the depth of penetration required by the infantry, and not on the width of the objective, since the tank attack will sweep down the whole objective. On the assumption that the depth of penetration is the same as already stated for the frontal attack (i.e., light tanks advance 600 to 800 yards beyond the objective), the frontage of the tank attack obliquely or at right angles to the infantry advance would be about 1,200 yards, or on a frontage of three medium sections in the " striking force." In view of maintaining the advantage of any surprise effected by a flank attack, it will be advisable to have less depth between light and medium tanks, so that the light tanks may not give too long a warning to the enemy of the medium attack.

It is important to remember that the frontage of the tank attack must depend on the distance of the infantry objective beyond the hostile line of foremost defended localities, e.g., if the infantry objective is this line, the frontage of the tank attack would be less than if the infantry advance had to penetrate some distance beyond it in order to reach the objective.

*Method of attack.*—So as to prevent attacking tanks being enfiladed in their advance down the enemy line, a flank guard of light tanks, on the enemy side of the attack, will be essential, and these can then, on the success of the attack, be employed to take up the line of observation 600 to 800 yards in depth from the objective. The withdrawal to the rallying point by the medium and light and close support tanks will be carried out on relief by the infantry on the same principle as for the frontal attack.

## CO-OPERATION WITH OTHER ARMS.

It is now necessary to consider the measures required to ensure co-operation between the tanks and other arms.

Let us take the case of the infantry first. Both tanks and infantry require to be informed as to :—(*a*) the distance of the infantry starting line from the objective ; (*b*) the starting time and starting line of both infantry and tanks. The infantry also want to know :—(i) the line of advance of the tanks ; (ii) the time the tanks expect to reach the

objective. Again, the tanks want to know :—(i) the line of advance of the infantry ; (ii) the units advancing to the area of the tank objective ; (iii) the time the infantry can expect to reach the objective and relieve both medium and light tanks, assuming the tank attack has been successful ; (iv) what assistance they can expect from infantry machine guns ; (v) positions of advanced dressing stations of infantry units co-operating with the tanks.

Then let us consider the question of co-operation between tanks and artillery. To begin with, in a frontal attack by tanks, the artillery will want to know the starting time and starting line of tanks and the pace of the attack. The tanks, on the other hand, will ask, if artillery is available, for :—(*a*) counter-battery fire, both preparatory to and during the attack ; (*b*) timed concentrations of H.E. and shrapnel on the hostile line of foremost defended localities and reserve areas. As the tank attack moves at 300 yards a minute, any timed concentrations of H.E. and shrapnel will have to lift at least one minute before the light tanks reach the objective, and it is suggested that these lifts should be for 300 yards and of minute duration, up to 1,200 yards beyond the objective to assist the light tanks in their penetration ; (*c*) timed concentrations of smoke shell, if wind is favourable, to blind enemy observers and enemy anti-tank guns on the flanks and front of the attack. If artillery is not available for this task, tanks must rely on their own close support tanks. It is for consideration always, whether tanks should ask for smoke on the front of their attack ; the essential factors being that tanks should not themselves be so blinded by their own smoke as to lose direction and should not be silhouetted against a background of smoke when passing out of the smoke screen. In other words, smoke screens on the front of a tank attack should be put down sufficiently far ahead to be clearing away when the tanks reach them.

Next, in the case of an oblique or flank attack by tanks, it will be all the more important for the Artillery to know the starting time, starting line and pace of the tank attack and especially the time at which the tanks consider they will reach the flank of the objective. As in the case of a frontal attack, the tanks should still ask, if artillery is available, for counter-battery fire, timed concentrations of H.E. and shrapnel on the hostile line of foremost defended localities and reserve areas, and timed concentrations of smoke on the enemy flank to be attacked, *but* it will be essential that all timings must be strictly adhered to, and that lifts of H.E. and shrapnel off the objective be of sufficient depth to clear the outer or enemy flank of the tank attack.

It should be noted that in the suggested method of attacks there is no intention of ordering tanks to penetrate into the artillery areas of

the defence, while it has been assumed that the hostile artillery will be in a zone of its own, some 2,500 to 3,000 yards or more behind the line of foremost defended localities. As regards the former, it is considered that the hostile artillery must withdraw, once the infantry whom they are supporting are beaten and have retreated ; that surprise is the *sine qua non* of success in the case of tank *v.* gun, and unless it is of paramount importance to destroy the enemy artillery, the loss of tanks incurred, should the tank attack be pushed frontally or even laterally into the artillery zone, would be out of all proportion to the advantage gained ; that, if it is essential to destroy the enemy artillery, this can be effected best and with least loss by a wide turning movement and an attack by tanks from the rear on the hostile artillery zone. As regards the latter, it is of course more than possible that all batteries of the defence have not been definitely located before the attack, and that the defenders may, if they are aware of the presence of enemy tanks, place certain batteries in hidden positions specially for anti-tank work. It would always, therefore, be of great advantage and assistance to have one close reconnaissance aeroplane detailed to co-operate with the tank attack, for the purpose of spotting such hidden and unlocated batteries, and it is suggested that the pilot of such a machine could indicate the presence of such guns to the tanks by diving in the direction of the guns with wing-tip flares lit on his machine. In view of all the other calls on the R.A.F., it is, perhaps, only a pious hope to think that such a machine would be available in mobile warfare, but it is mentioned here as another method of co-operation which tanks should ask for.

In this connection, it is interesting to relate that in the battle of 8th August, 1918, the 1st Tank Battalion dealt entirely successfully with the hostile artillery during their advance on their first two objectives, because an aeroplane was detailed to co-operate with each of the attacking tank companies for the express purpose of spotting enemy guns and indicating their positions to the tanks. The observing aeroplane dived in the direction of the guns and the tanks were thus able to surprise them. During the advance to the third objective, however, the aeroplane co-operating with the right company had for some reason to land and, thus deprived of its eyes, the tank company ran into an enemy battery, were surprised and lost ten tanks out of twelve.

Mention has been made of the possible presence of hostile tanks in the defence ; it is impracticable for attacking tanks to ask their own artillery to search with fire likely lying-up places for enemy tanks behind the enemy line of foremost defended localities. The reserve company (or battalion) of attacking tanks must be detailed to deal with any enemy

tank action during the attack, and after the attacking tanks have rallied, the whole force of tanks will be available for any tank *v.* tank battle.

## CONCLUSION.

An endeavour has been made in the foregoing article to deal with what may be described as a normal method of tank attack in close co-operation with infantry. Before closing, a word of warning is advisable regarding any figures mentioned; they should be interpreted in the spirit and only as a suggested basis of calculation of distances, etc., and not in the letter as fixed and unalterable numerical data.

The principles to be aimed at are these :—

(*a*) The duty of tanks is to capture their objective, and hold it until relieved by their own infantry. That objective may be on, or some distance behind, the enemy's line of foremost defended localities; the enemy front line may be close to their own infantry front line or perhaps the lines may be 600 to 1,000 yards or more apart. It may in some circumstances be impossible to arrange for the infantry to relieve the tanks on the objective in ten minutes; then the tanks must stay there until they are relieved. That tanks should not be more than ten minutes on an objective is an ideal and not an essential of co-operation between the two arms.

(*b*) The duty of infantry is to follow up the tank advance or success rapidly and so effect the earliest possible relief of the tanks. If such relief is possible by sending forward mechanized machine guns ahead of the infantry, once the objective has been cleared by the tanks, this will, of course, shorten the time that the latter need remain on the objective.

(*c*) The duty of tanks is to penetrate into the hostile position sufficiently far to ensure their own infantry being free from close rifle and machine gun fire during consolidation. Tanks should not be ordered to penetrate so far into the hostile position as to involve them in carrying out, without the possibility of surprise, frontal or other attacks on enemy artillery. Balaclava charges against batteries, prepared and in position, are no more feasible for tanks than they were for cavalry.

# A TANK OF THE FUTURE

## THE ULTRA BULLET AND ITS POTENTIAL EFFECTS

By L.V.S.B.

NO less an authority than Napoleon was responsible for the assertion that tactics change every ten years. If that was true in the early days of the XIXth century, the period must be even shorter to-day, because tactics are based on armament, the mechanical and scientific progress of which show unrelenting acceleration.

Since 1914, or perhaps since 1905, the advent of novel weapons on a large scale has torn up by the roots pre-conceived tactical ideas, cast them on the scrap heap, and turned the scholiast-minded, unreceptive soldiers who held them into the butt of war-time writers. Such weapons were the machine-gun-cum-wire of the 1905 to 1915 era, the use in the field of medium guns with immense tonnage of shell, chemical agents, air power, the tank, propaganda, and quite recently, again the machine pistol.

The surprise handed at Chapei to the Japanese, who, from the orthodox point of view, were far better organized and equipped than their opponents, must be very gratifying to those soldiers who think and believe that to-day the very foundation stone of victory must be the introduction and intelligent manipulation of a novel mechanical, chemical, or possibly electrical weapon of superior performance.

Since the success of the machine-pistol, a new portent has appeared in the shape of the ultra-high velocity bullet of Herr Gerlich.[1] In a rifle calibre this attains a velocity, with normal and reasonable pressures, of over 5,700 feet per second, and it will penetrate 12 millimetres of modern armour plate. At first sight such a weapon seems to threaten the dominance of the tank, because every infantryman can have in his hands an anti-tank rifle. Further thought will show, however, that the matter is not quite so simple. If the infantryman's new bullet will penetrate the tank of to-day, the tank's own gun with a correspondingly new bullet will penetrate so much earth, which is the infantryman's armour, that no practicable parapet will stop it. The fact that the tank gunner will usually be firing from a comparatively high turret at a fairly steep downward angle, makes the position of the defending infantryman in a trench all the more gloomy.

[1] See Editorial Note at the end of this Article.

At this stage two opposing factors would seem to cancel each other out, leaving us all square. But even this is not the end. The tank has two means of defending itself from crippling hits, one is armour, the other is speed.

If forced to reduce very greatly the area of its armour in order that it may be thicker, it can and must increase its speed. Other things being equal, the hits on a land (or sea) vehicle will decrease as the square of its speed. The tank, by improving its design and by supercharging its engine, has the power to increase its speed; pending the introduction of stimulating drugs or inhalants, the infantryman has no such potentiality. At the same time, there is probably a very definite limit to the ultimate battlefield speed of tanks, especially over shell-churned ground and in the presence of natural or artificial obstacles. This makes it more than possible that the tank, that is to say, the vehicle or gun platform, which produces the fire and advances to close quarters in the attack, must take to the air.

Many warriors will remember the "Salamander," an aeroplane designed in 1916, but which did not come into production until after the armistice. It carried several machine guns for "ground strafing," and was armoured with no less than 650 pounds of steel. Had "Salamanders" been used on the Western Front, they would certainly have sustained many casualties, because they would have been infrequent objects, and each would have attracted the fire of innumerable rifles and machine guns. But, given twenty such machines constantly in the air on the frontage of a single attacking brigade, it is unlikely that very many would be hit by the dispersed small arm fire of the defenders. Not only is this point important, but it will be obvious that the armament of modern "ground-strafing" machines with guns firing the ultra-high velocity bullet will render them more formidable than heretofore against targets on the ground. It is the comparatively low velocity of the present day guns of aircraft which militates almost more than any other factor against their efficiency in this respect. Aeroplanes, such as the Vickers "Jockey," fire a bullet which at long range goes not much faster through the air than the machine itself.

The normal fixed-wing type of aeroplane, however, is itself vulnerable to fire at four primary points, i.e. (i) certain points of the air-frame; (ii) the fuel tanks; (iii) the engine; (iv) the pilot. The first group cannot be armoured, hence speed is their only protection. The second group may be sub-divided, and a small reserve tank may be fully armoured. The engine may be duplicated, but a decisive hit on the pilot usually results in a complete triple casualty, for the pilot, the

gunner and the machine become a total loss when the aeroplane gets out of control near the ground.

These considerations are very much modified in the case of the autogiro; to such an extent, indeed, that an armoured and heavily armed machine of this type holds our greatest promise as the "ground-strafer" or aerial tank of the near future. Its air-frame presents not more but actually fewer points vulnerable to fire. The fuel tanks and engine, or engines, are the same as for the fixed wing machine of corresponding performance. But, whereas the disablement of either of these in the autogiro means nothing more than a perfectly reasonable and safe landing, even on broken ground, with the orthodox type of aeroplane a crash, usually involving the total loss of machine and personnel, is the result.

Finally it must be recognized that, with fixed-wing machines, the disablement of the pilot means, almost invariably, the loss of everything, while, with the autogiro, the observer or gunner having only a very slight knowledge of flying could bring the machine home and land it intact. Similarly, a fire in the air caused by incendiary bullets could conceivably be extinguished by the personnel of an autogiro, whilst the corresponding case in an orthodox aeroplane is well nigh hopeless.

To summarize, then:—

(i) The ultra-high velocity bullet forces the tank to rely more on speed than on armour.
(ii) It makes the entrenched defender more vulnerable to fire.
(iii) The need for speed will force the tank to take to the air.
(iv) Aircraft with ultra-high velocity projectiles will be more deadly against ground targets, and can themselves be armoured.
(v) The fixed wing type of aeroplane has four decisively vulnerable elements. In the autogiro one of these is altogether eliminated, whilst two more are very greatly reduced in importance.

Thus the ideal machine for producing "advancing" fire in the attack of a defended position appears to be an autogiro, preferably twin engined, with armoured reserve tanks and pilot's cockpit, mounting about eight ultra-high velocity machine guns for ground attack, and having a speed of about 85 to 95 m.p.h. at 250 feet. It should carry a good fire extinguishing outfit. It is probable that such a machine will be able to dispense with a flying-off ground, because it will be possible to launch it from a powder catapult carried by a standard type multi-wheeled lorry.

The futuristic commander would probably like to introduce such machines in large numbers to replace not only ground machine guns

and mortars, but even close support guns and much of his divisional artillery. There is no reason to suppose that these aircraft would be any more vulnerable to attack by enemy fighters than were the contact patrols and ground-strafing machines of the Western Front.

---

The new German cartridge and bullet, invented by Dr. H. Gerlich, were described in some detail in *The Times* of 23rd November, 1931, and 4th January, 1932, from which the following particulars are taken.

The essential features of this invention are that ammunition has been produced by which a Halger .280-inch rifle can fire a bullet with a muzzle velocity of 5,800 feet per second. This, of course, means that for short ranges the trajectory is almost flat, while the accuracy is stated to be very satisfactory. Moreover, preliminary trials indicate that the very high striking velocity greatly increases the penetration, even though the bullet itself is quite soft.

The cartridge is semi-rimless and is loaded with 100 grains of a special nitro-cellulose powder, which is cooler than nitro-glycerine propellants such as cordite.

With bullets of ordinary design many troubles follow any attempt to increase velocity much beyond 2,800 feet a second. There is metallic fouling due to the intense friction of the bullet envelope on the surface of the bore of the rifle; rapid erosion of the bore surface due to friction, and actual washing away of metal by the intensely hot gas; inaccuracy due to bullet deformation, instability and several other minor troubles. In the Gerlich bullet friction is reduced to a minimum by the simple device of so forming the envelope that there is no long parallel surface. On the bearing surface, into which the lands of the rifling cut, are flanges, similar to the driving bands of a shell; but in this case they are part of the soft iron envelope, which is coated with cupro-nickel.

It would also seem to be a fact that friction does not tend to become more severe as velocity is increased, but actually falls off after a certain critical velocity has been passed. Metal fouling is found to be non-existent even at muzzle velocities greater than 5,000 feet a second, the ordinary persulphate of ammonia test on the dirty bore failing to show the characteristic reaction. It would seem to be impossible to drive a copper-nickel coated bullet through a steel bore without rubbing off some of the softer metal on to the harder; but apparently it is done.

Washing away of the metal of the bore, which is practically confined to the breech end, varies as the heat and velocity of the gas. If the gas can escape past the comparatively slowly starting bullet, gas-washing of the bore is sure to take place, since the velocity of the fluid must be greater, even allowing for swirling, than when it is confined by the complete sealing of a perfect bullet. That the Gerlich bullet with its easily deformable flanges does seal the bore very thoroughly is proved by the fact that erosion is at least not greater than with ordinary bullets having muzzle velocities of the order of 2,600 feet a second.

This ammunition is used in conjunction with a rifle with a choke bore tapering to the muzzle end of the barrel.

The invention, the full potentialities of which have still to be developed, seems likely to open up new and important questions connected with rifle and machine gun fire, especially in regard to the use of these weapons against lightly protected personnel in warships and tanks. It may call for reconsideration of the protection provided for navigating and fire control parties in the former, and—as this article suggests—of the design and employment of the latter.—EDITOR.

# BROADER ASPECTS OF NAVAL STRATEGY

## SOME FRENCH VIEWS

By CAPTAIN G. P. THOMSON, O.B.E., R.N.

ADMIRAL CASTEX, whose book " Synthèse de la Guerre Sous Marine " evoked so much discussion at the time of the Washington Treaty, has recently published his third, and in some respects most interesting, volume of " Théories Stratégiques." In this work[1] he deals with what he calls " the external factors " affecting strategy—factors having a considerable influence on the preparation of war and conduct of operations, yet having in themselves no military aspect. The subject is by no means new. Mahan, Corbett and other writers on war have already told us of the effect on strategy of these outside influences—policy, geography, coalition, public opinion, and later, the situation resulting from the League of Nations and the various international agreements for the limitation of armaments. But Admiral Castex has very skilfully used his subject as the framework of a lecture to the French people on the true significance of sea power, and, as a corollary, on the desirability while there is yet time of selling or ceding all French colonies which are dependent on sea power. He has a good deal to say, too, on international law, submarine warfare, international policy, disarmament and so forth. In view of his high rank, and standing in the French Navy, his opinions on these matters cannot fail to be of interest to English readers.

The first portion of the book deals with the relations between policy and strategy, and at the very outset the author quarrels with the doctrine taught at certain Staff and War Colleges that " the sword takes the place of the pen " immediately war breaks out. It is true, he says, that Clawsevitz and Bernhardi recognized the intimate bonds between policy and strategy, but such aphorisms as Bernhardi's " war is a continuation of policy by other means " give an entirely wrong impression of the true state of affairs. They imply that diplomacy[2]

---

[1] " Théories Stratégiques." Tome III. By Admiral Castex (Société d'Editions Géographiques, Maritimes et Coloniales, Paris). 60 Frs.

[2] The author uses the word " politique " indiscriminately throughout the book to indicate national policy, foreign policy or diplomacy. In this chapter, the word " diplomacy " is clearly intended.

finishes when strategy takes on; that when war is over diplomacy re-enters the scene and replaces strategy, whilst in time of peace diplomacy acts alone and strategy sleeps.

In actual fact, diplomacy and strategy work hand in hand, continues Admiral Castex. Diplomacy assists strategy by seeking to lighten its burden in gaining the support, or at any rate the benevolent neutrality, of other nations. Diplomacy often intervenes to set strategy aright, to direct it along certain desirable channels; on the other hand, it may sometimes commit blunders which thwart strategy by unchaining the ill-will and even the hostility of other nations. Thus, strategy cannot divorce itself from diplomacy and operate as if it were a free agent. As illustrations of how diplomacy acts as an auxiliary to strategy, the author gives many examples from past and modern wars. Allied diplomacy kept Turkey out of the war until 28th October, 1914, by which time strategy had been able to concentrate troops from India and Australia in Egypt. Italy's neutrality and subsequent entry into the war on the side of the Allies furnishes another example. Again, where coalitions are involved, he says, diplomacy powerfully aids strategy in the difficult task of preserving unity amongst the Allies—both the attack on the Dardanelles itself and the Greek offer to collaborate in it were bitterly opposed by Russia, who might well have left the coalition but for the strenuous efforts of diplomacy.

Another way in which diplomacy "fights" in war is by putting forward "feelers" or conversations with the enemy—directly, or through neutrals—for the purpose of testing his powers of resistance or to outline the features of the future bargain which will produce peace. Quoting the wars of the French Revolution and Empire, Admiral Castex maintains that France and England never ceased throughout the period 1793 to 1815 to remain in diplomatic contact, direct or indirect. He concludes this chapter by insisting that the services which diplomacy renders to strategy give it the right to a hearing by its associate in important cases, a fact which many military minds of to-day refuse to admit. In the war of 1914-1918, not a few officers of high rank showed a preference for the Western Front, to the detriment of other theatres. This, he alleges, was not the result of a keen appreciation of the various political and military factors, but simply of a narrow strategic dogma—as was illustrated by the opposition of the Chief of the British Imperial General Staff and Sir Douglas Haig to Mr. Lloyd George's proposals to send reinforcements to the Italian front after Caporetto in October, 1917.

Discussing the relations between policy and strategy in time of peace, the Admiral remarks that a peace-time strategy exists, which embraces all measures that can be taken to increase the power of an

army or fleet, from programmes of new construction and the furnishing of supplies to the framing of plans of operations. Thus, strategy in time of peace renders policy a service just as policy assists strategy in time of war. The two continue in parallel. Unfortunately, however, the same intimate bonds between them are no longer evident except in the particular case of an ambitious nation in the full process of development and expansion. Dangers are hypothetical and far removed. Policy is unformed and uncertain, strategy is without orientation or precise aim. Only when a direct menace arises which forces a nation to provide the necessary parry, does this mutual indifference between policy and strategy disappear.

England, he continues, was a case in point at the time of the German expansion in the early days of the XXth century. Policy and strategy then entered the field with a similar outlook. Whilst policy succeeded in producing an entente with Russia and France, naval strategy concentrated British Naval forces in the North Sea, equipped Rosyth as a base, and drew up a new war plan (War Orders, 1912). But, he adds, land strategy certainly lagged behind, for the provision of a single army corps to intervene on the Continent was totally inadequate and compromised future operations in advance. No effort was made to set up an organization which would have produced an army worthy of such a great country, though admittedly this was impracticable since such a movement would not have been supported by her people or her politicians. Neither fully realised the situation nor imagined that England would require to take part in the war which was about to begin, since the German menace was less grave to the English than to the French.

Few Englishmen will agree with the author on this point, for the Expeditionary Force, far from " compromising future operations in advance " was of real assistance to the French army in delaying the advance of the German troops. The German menace, too, was certainly grave enough to the majority of Englishmen, but they saw no reason why a strong Navy and a small mobile Army should not achieve England's main purpose, security, as they had achieved it in the past.

Having dealt with the relations between strategy and policy, both in war and peace, Admiral Castex goes on to discuss the reaction of strategy, i.e., the influence it may have, on policy. Strategy, when well conducted and crowned with military success facilitates the role of policy and smooths away its obstacles. This, he considers, is due to the prestige which force possesses, as was shown in the case of Rumania in the Great War. Not until after Brusilov's successful offensive did she decide to join the Allies. On the other hand, strategy, by adopting an independent attitude, may deprive policy of all its freedom of

action, presenting it with a *fait accompli* and all its consequences. No more excellent example of this, he suggests, can be found than in the assurance given by Sir Edward Grey to Monsieur Cambon on 2nd August, 1914, that the British Navy would intervene if the German fleet committed any hostile acts in the Channel against French interests; that, in a word, meant the entry of England into the War. Admiral Castex maintains that this assurance was the direct outcome of the conversations begun in 1905 between Admiral Fisher and the French Naval Attaché in London, and between the French and British General Staffs who employed the military correspondent of the *Times* as intermediary. It is true, he says, that both Sir Edward Grey and M. Cambon were aware of these conversations, and even encouraged them; but the British Cabinet as a whole were not informed of them officially until 1912, when it was made clear to France that the exchange of military points of view left both governments free to act as they liked, and that the dispositions of the two fleets did not entail a promise of co-operation in war. Nevertheless, he maintains, the existence of naval conventions and the re-distribution of forces which was a corollary to them, created a particular situation and caused scruples in English minds which did them the greatest honour. As Sir Edward Grey put it: "have these conventions, unless we intervene, not placed France in a position of real disadvantage; have they not created an obligation in fact, in spite of all stipulations to the contrary?"

The author seems anxious to leave no stone unturned to prove his point, for he now continues with a lengthy and somewhat tedious account of the gradual usurpation of political power by Napoleon, of Ludendorff's partially successful attempt to do likewise, of the arguments for and against the invasion of Belgium, and finally of the continual bickerings between the German statesmen and strategists throughout the course of the "U-Boat Campaign." These are all discussed in detail, as illustrations of the influence, the exaggerated influence, which strategy may have when it encroaches on the domain of policy—a state of affairs only found in a country where customs, institutions and circumstances give to the military leaders an excessive and disproportionate influence in the Cabinet.

In Admiral Castex's opinion the men at the head of affairs in Germany were not in the least surprised at England's entry into the war. Besides quoting Bethmann Hollweg and Prince Lichnowsky (the German Ambassador in London) in support of this view, he refers us to the various orders given by the German Admiralty to their Admirals afloat, notably the telegram dated 11th July, to Admiral von Spee: "England will probably be hostile in the event of war." In his opinion, the

German military command regarded England's intervention as merely an additional risk; a risk of little moment since their army was to be victorious before she could possibly act effectively. Indeed, German naval headquarters were informed that the troop transports in the Channel need not even be attacked.

After emphasising that the German Chancellor made no pretence of resisting the demands of strategy, he asks what might have happened if strategy had listened to the wise counsels of policy which should have been offered. He suggests that the German forces, confined as they would have been to the small sector between Belgium and Luxembourg, would have had to adopt the defensive. This defensive could not have been overcome by France who had no intention of violating Belgium neutrality. Germany could thus have had much greater forces in the East, and have obtained resounding victories. England, reassured as to Belgium, would perhaps not have moved and, as a consequence, Italy would have remained an active partner of the Triple Alliance, whilst Japan, Rumania and other Powers would have kept out of the war.

Admiral Castex deals in a later chapter with the legal and moral aspect of the German submarine campaign, but in his account of the discussions which it provoked amongst the German leaders, he makes no secret of his entire disagreement with the American claim that their citizens were entitled to travel freely in the war zone, even in allied ships, without risk to themselves. "The German argument," he adds, "that the Americans had a perfectly simple way of avoiding risk by not embarking in allied ships was quite sound. If not, why was there such a difference of opinion on the subject in America itself?"[1]

Summing up, he recommends that policy and strategy should not be directed by one person, although he admits that Colbert, Pitt and Napoleon did so successfully. The ideal, he thinks, is a combination like Bismarck and Moltke, where the political and military chiefs have the same aims and work in close liaison and confident union. Hence, he adds, the necessity for the statesman to have an insight into strategy, a fact which is now recognised in England where there are courses of instruction in this subject at the Universities. The strategist, in turn, should have a knowledge of international policy.

Passing to the next external factor—geography, Admiral Castex covers practically the same ground as Mahan in an endeavour to bring

[1] It is interesting to compare this attitude towards submarine warfare with that of the German Admiral Bauer—see "The Submarine in Future Warfare," in the JOURNAL of August, 1931. Both these writers give the impression that, in their view, submarines must in future act humanely, but that if enemy or neutral shipping enters a proscribed area it will be at its own risk.—EDITOR.

home to the French people the importance to a maritime nation of a favourable geographical position, and the conditions upon which the strategic value of a position depends. He compares England's favourable situation in the Anglo-Dutch wars and in the war of 1914-1918 with that of France, who, throughout her maritime history, has had the enormous mass of the Spanish peninsula interposed between her sea coasts, necessitating a division of forces between the Atlantic and the Mediterranean, with the consequent difficulty of uniting them. It is true, he remarks, that with the high speed of modern ships, the voyage from Brest to Toulon can now be done in four days, instead of the seventeen which Bruix took in 1799; nevertheless, the peninsula is still very embarrassing, as would be obvious at once if France were engaged in a war with a Power to the eastward, and Spain were hostile. Her communications between the Mediterranean and Atlantic would be open to flank attacks from the Spanish coasts, the Canaries, and above all from the Balearic Islands which nature has so inconveniently placed across the route joining Marseilles with Algiers and Oran.

Hence, he adds, it is clear how necessary it is that Spain, if not acting with France, should at least not be hostile. Conversely, an enemy must ardently desire to have her on his side or to use her ports as naval bases; in this connexion, the hidden motives harboured in certain minds regarding the Spanish-Italian Treaty are no secret—the Treaty was certainly a stage on the road, though its clauses fell short of what was required by Rome. If there is one place in the world, continues Admiral Castex, where French diplomacy cannot afford to make blunders, it is Madrid. Why therefore oppose the just claims of Spain to Tangier? England's opposition can be understood, since the question of the Straits has always been a thorn in her policy, but for France to oppose Spain in this matter is merely to play the game of her adversaries. The place in any case is indefensible from a military point of view. It is by means of the Oudjda-Fez-Casablanca railway that France must establish her communications between Algeria and the Atlantic, unhampered by the Gibraltar passage. It is a pity, he adds, that France does not realise that the safety of her communications in war is worth an insignificant sacrifice.

After an examination of the strategical situation that would arise in the case of war between France and Italy, Admiral Castex reminds his readers that geography largely conditions the attack and defence of communications and that this fact has been one of the reasons for the deep and incomprehensible hostility of many Englishmen towards France. They feel that by her exceptionally favourable geographical situation she is in the best position to attack the essential British communications.

Dealing with the question of bases, the Admiral, after emphasising the importance of examining carefully the political, military and geographical considerations before deciding to fit out a base, refers to the wisdom of English policy in selecting Singapore, although "the Admiralty since 1926 have recognised that their real Asiatic enemy is elsewhere than in Japan and that the latter may well be England's ally against him." He then discusses the strategical situation in the Far East and concludes that both England and Japan have possibilities of action far superior to those of America.

As a counter-stroke to the seizure of the Philippines by Japan, he suggests that America would either seize one of the actual islands of Japan, which would serve as a pawn in the peace negotiations, or, counting on the benevolent neutrality of China, establish a base on the Chinese coast, and from there cut off essential Japanese supplies from that country. Herein, he adds, lies the explanation of America's policy towards the Chinese which is sometimes so incomprehensible and so strangely at variance with the solidarity which should exist in this part of the world amongst Western nations.

Admiral Castex concludes his analysis of this subject by a chapter on French colonial expansion with which, he maintains, French strategy cannot compete. The defence of oversea bases is dependent on sea power, and as it is impracticable for France to build up to the strongest navies of to-day, he suggests that she should reduce her commitments to a level bearing some relation to her effective naval power. Hence, as a logical conclusion, he proposes that she should cede all her Asiatic, American and island colonies, which she is not in a position to defend, and concentrate on consolidating her African Empire. Better, he adds, get rid of what we cannot keep than have them wrenched from us by force.

In a chapter on coalitions, Admiral Castex illustrates from past wars the need for centralised command, but shows how difficult it is to achieve, when nations combine for their mutual advantage or in the face of a common peril. This difficulty arises even in regard to the command of the various zones, and still more in respect of the direction of the operations as a whole. He enumerates the Anglo-French conventions made before and during the war which aimed at fixing the responsibility for command in the various naval war zones, and dwells particularly on the Mediterranean theatre which was entrusted to the French. He shows how, with the march of events, the centralised command in that area gradually ceased to exist.

There is another French book which should be read in this connexion: "Le Commandement Naval en Méditerrannée," by Capitaine Laurens.[1]

[1] Le Commandement Naval en Méditerrannée, 1914-18. By Adolphe Laurens. (Payot, Paris.) 30 Frs.

This gives a complete picture of the vicissitudes and difficulties encountered by the French C.-in-C. In proportion as the theatre of operations grew more important, says Capitaine Laurens, political considerations amongst the Allies took precedence over military considerations, and step by step the chief command was deprived of all its prerogatives. Capitaine Laurens has also a good deal to say about the ignorance of the political situation on the part of the French naval commanders, and their consequent inability to make independent decisions when immediate action was imperative. Thus many valuable opportunities were lost whilst matters were referred to the Government.

Dealing with the direction of naval operations as a whole, Admiral Castex describes the meetings of the Inter-Allied Naval Conferences, which were held from time to time during the Great War and suggests that the Inter-Allied Naval Committee—the permanent organ set up in 1917—performed a useful service in maintaining the necessary contact between the Allies, and in obliging the various members of the coalition to envisage and study collectively the possibilities of the future. But, he adds, it was only a caricature of centralised command, for it had no power to make decisions and everything had to be referred to the respective governments. Remarking that the influence of the American members of the Committee became more and more marked as time went on, the Admiral suggests that if the War had lasted much longer, American influence over the direction of operations would have been preponderant. The Americans, he adds, appeared as saviours; they would soon have been masters. In 1918, the victory was an Allied one; in 1919, it might have been an American one. And, he asserts, a person in close contact with Marshal Foch informed him that, for that very reason, the Allied offensive was pushed on with particular energy, in order to achieve success in 1918.

The author concludes with a warning that it is not always wholly desirable for a nation to ally herself with a much more powerful country, for she can never be sure that her interests will not be sacrificed during the war and the subsequent peace negotiations.

In the course of his analysis of the effect of public opinion on strategy, the author makes no secret of his own conviction that France is making a mistake in including so many submarines in her new construction programmes; in consequence she has difficulty in keeping on a par with Italy in regard to surface craft. This regrettable state of affairs, he considers, is directly due to the influence of public opinion which remembers only the exploits of the German submarines, and the losses they caused to Allied shipping. The public forget that the submarine was finally defeated; that in any case, in a future war, she will

operate under conditions infinitely less favourable than in 1914-18. In future she will have to reckon with political and humanitarian obstacles which the Germans disregarded; and these will reduce almost to nothing the results of this future submarine war which haunts so many brains. Particularly is this the case now, since France has so inconsiderately signed the unfortunate Article 22 of the London Naval Treaty;[1] which greatly restricts submarine operations.

On the other hand, he continues, this irrational tendency on the part of public opinion has had the great advantage of safeguarding France at the various disarmament conferences at which the fate of the submarine is always at stake. Her negotiators know that if they weaken on this point they will be lynched on their return and the government immediately swept away. This, says Admiral Castex, is a godsend, not because submarines, which form only one important arm of the fleet, are going to save France, but because it would be illogical and absurd to give up the many operations which they are capable of carrying out. Why not equally well do away with the gun, aircraft, the torpedo, the tank? Obviously, the master of the surface will have the last word, but with much greater difficulty if his adversary has submarines, since these necessitate supplementary operations, patrol craft, convoys, escorts, minesweepers, etc. And that is where the shoe pinches. At bottom, the Anglo-Saxon antipathy to the submarine is nothing else than a search for the "minimum effort," of which their aversion to compulsory service forms another example. "Our friends across the Channel," he concludes, "would do well to expel this feeling which is unworthy of their military valour and glorious past."

There seems to be no recognition here of England's insular position, nor of the impracticability of any country maintaining an army as well as a navy on a first-class scale. Nor is it clear why, if the submarine is merely an important arm of the fleet, the London Naval Treaty should greatly restrict her possibilities of action.

Admiral Castex quotes many illustrations from past wars to show how strategy was affected in different ways by public opinion, and he concludes his analysis of the subject by suggesting that the creation of public opinion and its guidance in the desired direction will be one of the chief functions of the Minister of Marine. Its influence on strategy, he adds, has always been felt and will become still more important as nations progress in the social and political scale.

He makes no secret of the fact that he regards conferences for the limitation of armaments with the utmost suspicion. He is at a loss

[1] France has not yet ratified this part of the Treaty.

to understand why efforts should be made to restrict the development of one particular factor in national power, military force, and not others, such as economic, industrial, and commercial factors. Clearly the desire for maximum expansion is a perfectly natural sentiment. After enumerating the attempts to reduce armaments, from " The Project of Perpetual Peace " published at Utrecht in 1713 by the Abbé Saint Pierre to the abortive negotiations between England and Germany from 1906 to 1914 for a naval holiday, he describes in detail the various disarmament conferences since 1918. If, he continues, it is essential for France to take part in these Utopian conferences, it is important to ensure that nothing but deliberations are the outcome. " Washington has taught us a lesson : we must avoid at any cost tying our hands. Hands off our liberty of action." The positive method of trying to reach an arrangement, which it is hoped will be the least inconvenient for France, must be avoided in favour of the negative method. That is to say, he maintains, France should adopt a delaying attitude, by putting forward objections and demanding more time. If this is not always possible for fear of being called obstructionists, then she must propose solutions, praising their merits whilst all the time knowing that they will not be acceptable to other nations, since it is for that very reason they were conceived.[1]

In the course of his remarks on the London Naval Treaty, he again refers to the restrictive effect of Article 22 on submarine operations, and concludes his remarks on disarmament by asserting that, without control or other supervision, these treaties can always be, and are being circumvented, notably in the case of Germany, whose " Deutschland " is more like 14,000 than 10,000 tons, due to unauthorised adoption of the Washington tonnage.

Similarly Admiral Castex warns his readers to put little faith in the League of Nations, and particularly in the Kellog Pact, which latter permits defensive wars ; " are not all wars defensive " he asks. What the League of Nations will indeed probably do, he prophesies, is to obstruct strategy for some six months to a year whilst the dispute is before the Council or the Assembly ; in the meantime every measure short of mobilisation will be taken to prepare for the coming conflict by the party which is bellicose and determined on war—a matter which should make Frenchmen somewhat uneasy.

In a final chapter dealing with International Law, Admiral Castex emphatically repudiates the doctrine that " the necessities of war are superior to the laws of war," and this applies particularly to naval war,

[1] Vide the French Proposals at the present Disarmament Conference—p. 386 of this JOURNAL.—EDITOR.

since the interests of neutrals have to be considered: interests which impose very severe limitations on naval strategy. Dealing with the arming of merchantmen for self-defence, he reminds us that it was the rule in the olden days for merchantmen to be armed; but in the XIXth century, with the disappearance of piracy and the consequent security on sea routes, they were deprived of their armament on the assumption that they could not be captured without visit and search. They had, however, to be re-armed again when the German submarines commenced to attack them at sight. Thus, although there was no question of the creation of a new rule, the arming of merchantmen in self-defence in the Great War was a reversion to an old principle. So, too, with technical weapons, whose employment in war is first resisted, and afterwards becomes regulated and recognised.

In brief, Admiral Castex continues, International Law is continually in the process of evolution as new problems arise, problems, for example, such as that of "war zones." Germany's procedure of declaring certain vast areas, as determined by her, to be "war zones" in which any ship would be sunk at sight, is not, and never has been, admissible; but, he adds, it has certainly called attention afresh to the question of "war zones," and the legitimacy of this procedure has become recognised under certain definite conditions; for example, in the vicinity of a blockade line, the blockading force is authorised to use "destructive measures" against vessels which try and force the blockade. Presumably, therefore, submarines may be used to enforce a blockade; in which case, how far out is the blockade line to be? We may ask, does the author agree with the German Admiral Bauer's opinion in "Das Unterseeboot"[1] that this line should extend to a night's steaming radius from the coast?

Admiral Castex goes on to discuss the so-called "Freedom of the Seas," and justly observes that there would be little purpose in naval warfare—a mere gladiatorial combat—if this farcical doctrine were to be accepted. He concludes his book with an interesting account of the Allied blockade measures between 1914 and 1918.

This new work covers a vast number of subjects, some of which are of fundamental importance and will undoubtedly provoke lively discussion. Not everyone will agree with the Admiral's conclusions, but all will pay tribute to his courage and sincerity.

[1] See the JOURNAL for August, 1931.

# THE DEFENCE OF THE SUEZ CANAL

By Lieutenant-Colonel A. Baird Smith, D.S.O. (Retd.).

OWING to the fact that British traffic through the Suez Canal exceeds that of all other nations combined, that waterway is generally regarded in this country as being a vital artery of Imperial trade and, therefore, essentially a national concern, while the question of its security is frequently looked upon as part of the "Egyptian Question" as a whole. Nevertheless, if we recall the history of the Canal, and study carefully a map of the Empire trade routes, we may be led to the conclusion that the severance of this particular artery would hardly cause such fatal results as are often predicted. It would seem, too, that the question of Egyptian independence as it affects the Canal zone should be considered separately from the military defence of the Canal itself, and that the problem of whether British troops for the protection of European lives against mob violence should be stationed in the capital or on the banks of the Canal has no relation to the defence of the latter against external aggression.

Compared with the other main trade routes, that passing through the Suez Canal is, with the exception of Panama, the most recent, having been in operation only some sixty years. Could the statesmanship of Palmerston and his colleagues have prevailed, this artery would never have existed; the wiseacres of Westminster denounced the project as impossible, obstructed the negotiations for the concession, and held entirely aloof from giving any financial assistance by loans, or even by subscribing the price of a single share. They regarded the whole business as a French intrigue, directed against British maritime supremacy and British interests in the Far East.

The first opening of the "Overland Route" to India, which was then the indirect result of the enterprise and foresight of British steamship designers, builders and owners, appealed to the fancy of a public already impatient of obsolescent means of locomotion, and keenly alive to the new possibilities of steam. The project of a ship canal, that should obviate the disadvantages of transhipment at Alexandria and Suez and the discomforts of the desert journey, and could also undertake heavy freight traffic, was thus the natural sequence to the successful working of the overland short cut. Though British merchants and

shipowners could perceive its desirability, the attitude of their Government was very discouraging. The nimbler wits of French statesmen at once grasped the situation; so that by the time the enlightenment of Palmerston's successors was complete, de Lesseps had built his canal, and the shares were all in hands other than British.

The British Government could, however, still continue to embarrass the Canal Company by its objections to the rate and amount of dues levied on British ships. This form of obstruction, which threatened to become a kind of war, lost much of its point when at length a statesman of vision contrived to acquire the block of shares held in the Khedive's name for the British nation, which thus became the largest shareholder in the undertaking. The "Compagnie Universelle" did not, of course, own the Canal, for which it had a ninety-nine years' lease. The enterprise, completed mainly by French brains, and largely by French money, and the operation of the Canal being from the first in the hands of French overseers and engineers, the interest of the British government suddenly displayed in this alien concern was the more remarkable. Perhaps the original supporters of the Palmerston policy would have seen nothing inconsistent in this complete change of front; indeed, if the Canal was a danger to British maritime supremacy, it could only be so in the hands of others. To get a footing in Egypt, so as to be in a position to "command" the Canal, might well have been considered the corollary to acquiring the biggest block of shares; but that, in 1882, a French government could refuse the opportunity of crowning its work in Egypt by occupying the country for its political pacification, was quite inconceivable.

During the Napoleonic wars, the necessity of feeding some forty million inhabitants of these Islands, mainly on produce imported from overseas, did not exist to complicate the conduct of our trade with India and the Far East. The uncertain, often greatly extended, duration of Eastern voyages under sail was not, moreover, a matter of grave concern; while the sailors and soldiers carrying out defence tasks abroad sometimes benefited by the impossibility of interference from home. The Eastern trade, too, was at that period in no way indispensable to the existence or welfare of the British people; even when their wants had increased in proportion to its multiplication, the importation of beef and corn into the Empire's citadel depended for its continuance in peace or war entirely on two things—the supremacy of the British Navy, and the will and capacity of foreign and colonial producers. The great bulk of such supplies, given these two conditions, could always reach the British Isles with regularity and safety, without the existence of any Canal at all.

At the date of the opening of the Canal, which was constructed solely for steamships, a great volume of trade under sail was still passing to and fro from the East by way of the Cape of Good Hope; with the exception of certain "clipper" liners the ships were slow, and very far from running to a time schedule. The disproportion between the two routes, in the matter of voyage length, was thus at first very marked. But with the gradual increase in ocean-going steamers, and the concurrent dwindling of sailing fleets, the difference came to be expressed, not as at first in months but in weeks and even days. The object of the Suez Canal, as of other such canals, being first and last an economy of time and distance, the complete "mechanization" of the merchant fleets of the World has tended to reduce, to a very considerable degree, the element of time-saving involved in its use. Time, even a few days, might conceivably be the all important question in the passage of warships or troop transports; and it is possible that the ravages of a submarine war might so deplete certain war stores in home bases, such as oil in its various forms, that vessels from the Persian Gulf or from the East Indies could not, short of an actual blocking of the Canal, be diverted to the Cape route. But, for food ships coming from Australia or New Zealand, the increased risks in narrow waters would greatly minimise the advantage of time-saving effected by incurring them. There might remain, for this trade, the third alternative of the Panama route; but would that route be open to British trade?

The other nations who ordinarily use the Suez Canal nowadays represent, in the aggregate, an interest in its security and freedom from interference in war almost as great as our own. In fact, far from being a peculiarly British trade artery, the Canal must be regarded as one of the common highways of the world's trade, to safeguard which is an international problem. Had the responsibility for the suppression of Arabi Pasha's revolt been undertaken by the Power that built the Canal, it is probable that its defence and its actual ownership would long since have been arranged, if not to the general satisfaction, at least to the great simplification of the whole question.

At the time that the Company obtained its concession from Said Pasha, and in spite of British diplomatic hindrance secured its ratification by the Sultan of Turkey, the latter was the ground landlord of the Isthmus. But to-day, with Egyptian independence on the way to consummation, and with the heirs of the original concessionaires firmly established by usage in their extremely valuable leasehold, an interesting point of law as to its actual ownership may at any time develop.

Some confusion of ideas, as to the permanent military defence of the Canal, exists as a legacy of the Great War, and of the attacks made

upon it in the course of the same. The presence, in time of peace, of a British force at some spot such as Ismailia is, so far as the Canal is concerned, quite superfluous—unless, indeed, this force were regarded as defending the Canal from the Egyptians themselves. The only conceivable reason that might persuade Egyptians to attempt sabotage of their own Canal, would be their desire to embarrass the occupying Power in time of war; and against such possible sabotage the Power or Allied Powers in war control of the sea-accesses to the Canal would of course provide. Once these sea-accesses are denied to Great Britain by a stronger opponent, the Canal loses for her its whole value; but this is only to say that the real artery of British Eastern trade is not one hundred miles of Canal defended by troops, but the whole length of the Mediterranean and Red Sea as well, kept open and safe by the British Navy.

The defence in war-time of a ship canal connecting two seas resolves itself into two problems; first, the denying of enemy approach to its sea ends, either by means of a fleet with its surface ships, airplanes and submarines, or by shore batteries and minefields, or by all these means combined; and second, the policing of the channel, and preventing approach to it by land or air across the nearest frontier, of enemy raiders or larger bodies of troops. The eastern Egyptian frontier, from Rafa to Akaba, is now as it were covered by the mandatory Power in Palestine; so that the makeshift use of the Canal itself as a first line of military defence is not likely to be repeated under present conditions. An attack on the Canal from any other direction must be preceded by the invasion and conquest of the Delta; and if this were accomplished, the Canal would be uncovered, and pass under the enemy's control.

A situation, such as makes the fortification of the Panama Canal a natural precaution against a possible attempt to interrupt the direct communication between the Atlantic and Pacific squadrons of the United States' fleet, can hardly be conceived as likely to exist at Suez or Port Said. The war-concentration of the British fleet, for example, would not depend on passing large numbers of warships through the Canal; and even if the object of fortifying its approaches was to prevent Great Britain from using this highly valuable line of communication, such fortification in peace or war would certainly be treated as an unfriendly act. The prevention of any such form of defence or of any attempt at sabotage, would, as already suggested, be one of the first cases of the interested maritime Power or Powers on the outbreak of war.

It might be possible for Great Britain to come to an agreement with a friendly Power, who—let it be assumed—had stepped into her shoes in Egypt, to the effect that it should guard the Canal itself in war,

and see that the fairway was kept open. It is even conceivable that this same Power, being in command of the sea-approaches as well, might refuse passage to the ships of Great Britain's enemies; or that Egypt, having become independent in fact, and not being ranged with those enemies, might herself guarantee that all friendly vessels should be allowed free entry and exits. Those who contemplate the necessity of defending the Canal, and would quarter British troops on its banks for this purpose, must assume that they could always be supported or reinforced; they could not possibly remain isolated in such a key position. Reinforcements would have to come by sea; but if the sea-communications were uninterrupted and remained in British hands, it may be assumed that the only danger to the Canal and its garrison would be from the Egyptians themselves, or from other hostile forces able to penetrate Egypt by way of its land frontiers.

The practicability of such an enterprise, under present conditions in "occupied" Egypt, is probably limited to air-raids from a distant base, against shipping passing through the Canal; and as the range and power of aircraft tend to increase, the problem of defending one hundred miles of waterway against such a danger is simple. The native military and air forces of a friendly Egypt could perhaps supply the necessary defences of the Canal against such contingencies; and it would appear desirable that along with further enlargement of Egyptian autonomy there should be acceptance of a definite international obligation in this respect.

The Constantinople Agreement of 1888, signed by nine Powers, laid down that the Canal was always to be "free and open to all in time of war as of peace, to every vessel of commerce and of war, without distinction of flag"; a pronouncement curiously resembling Article 2 of President Wilson's Fourteen Points. Neutralization, it seemed, could go no further. Responsibility for maintaining a peaceful flow of traffic remained then, as now, the interest of all but the business of none.

Some six years before the Agreement was signed the British commander of the forces about to invade Egypt had, on his own responsibility, closed the Canal to traffic for several days. Even when the Agreement was ten years old, the fact that Spain was at war with the United States was considered a good reason for refusing passage to Spanish warships. But in the Anglo-French Agreement of 1904, the principle of "freedom" was once more hopefully asserted; in time to permit the passage of a Russian squadron en route to the war in the Far East.

For another ten years of peace the artery continued to function; and anxiety as to what would happen to it, in the expected event of a European war, in which the two signatories of the 1904 Agreement were

sure to be Allies, was merged in the larger question of the defence of Egypt itself. Obviously, of the nine Powers who had signed the Canal's charter of freedom in 1888, five—viz., Great Britain, France, Italy, Holland and Spain—would be most interested in preserving the same; while Germany, Austria and Turkey, if allied in war, could be counted on to desire and perhaps attempt its complete restriction.

In 1914 the Constantinople Agreement became a "scrap of paper." Lack of means, not of will, prevented Turkey and Germany, both guarantors of its freedom, from seizing the Canal, denying its use to others, or even destroying it. On the other hand, there was never any intention on the part of Great Britain, or France, of permitting enemy vessels, could they have approached the Canal, to enter and pass through it. In fact, the freedom of the Canal, like the freedom of the seas, could exist only under peaceful conditions; even neutral traffic became necessarily subject to such war restrictions and delays as the Power in military control chose to impose.

As the promoters of the Canal realized from the first, the maritime Powers who were going to benefit by using it, would for that reason afford it all necessary protection. Unlike the Panama zone, annexed, developed and fortified by the Power supreme in the Western Hemisphere, the Suez concession is a public right of way across a private domain; to maintain which, usage and the goodwill of the landlord ordinarily suffice, while the public's jealousy of its rights is the final guarantee. It is true that the original titular owner of the Suez Canal zone, the Sultan of Turkey, has to-day no direct representative, and that the head of the new Turkish Republic might assert his ownership in law, and on the expiry of the lease claim to receive a ransom for its renewal; and equally, perhaps, a free and independent Egypt might claim complete possession of the Canal and its approaches, with right to the exclusive levying of dues. But such pretensions, even if argued before the Assembly at Geneva, or referred to the Hague would have little chance of succeeding; and still less if asserted by force.

The Agreements of 1888 and 1904 aimed at achieving a kind of international status for the Canal, but they tended to regulate to the background the question of its actual internationalization, and to produce the impression that this is already accomplished. Any opportunities that presented themselves to British statesmen to negotiate successfully the nationalization of the Canal, or to declare permanent British "occupation" of Egypt, whether neglected or purposely disregarded, have long since passed; nothing can now make the Canal an exclusive individual possession. But at least, before the future status of Egypt is finally determined, or the Canal's lease expires, it is not too late for the combined users to settle its definite internationalization for all time.

# AIRCRAFT ATTACKS ON WARSHIPS

## AN HISTORICAL SUMMARY

By Major Oliver Stewart, M.C., A.F.C.

THE controversy on the relative values of aircraft and warships in attack and defence is not likely to progress far towards any final settlement unless some new war tries out these potential antagonists in their latest forms and under modern conditions. At present, arguments must be based on the experience of the late war—very limited so far as this form of fighting is concerned—and on the results of trials and exercises under peace conditions; all else must be pure theory or conjecture.

It is, however, worth while summarising the history of these attacks, and recording the results of such practical tests as have been made public. But, having done so, it will still be necessary to bear in mind that the outcome of a few encounters, under conditions which may have favoured either the aircraft or the ship, cannot be taken as an indication of what will happen in another war. Still less is it safe to draw any but purely technical conclusions from trials against old and stationary warships without powers of retaliation.

To begin with, it must be recalled that in the early days of the War the only types of bombs available for aircraft operating over the sea were the 10 lb. and 20 lb. Hales bombs. Even when, in 1915, bombs weighing 65 lb. and 100 lb. were produced and served out, they were so scarce that Admiral Sir Reginald Bacon, in "The Dover Patrol," remarks that his pilots generally took their allowance of bombs to bed with them to prevent other keen competitors from stealing them! In addition to the small size and limited supply of bombs, the aircraft had no bomb sights capable of providing accurate aim, while almost nothing was known of the technique of bombing.

Apart from attacks upon merchant shipping, instances of the use of aircraft against submarines are more numerous than those of encounters between aircraft and other vessels; but accounts of these, as of most combats with submarines are difficult to verify, as claims made by one side are frequently not substantiated by the records of the other.

In practice, it is often difficult for the occupants of aircraft to know whether they have inflicted any damage on a submarine or not, or whether the damage was serious or slight. According to official records two hundred German submarines were sunk during the War; aircraft attacked, and are believed to have damaged about fifty submarines; but of these fifty only seven were sunk; twenty were severely damaged. Incidentally, it may be noted that by indicating the position of submerged submarines to surface craft, aircraft were instrumental in the destruction of four more.

It will be appropriate to begin the list of engagements between aircraft and submarines with an episode which occurred off Zeebrugge in July, 1916. A British seaplane was patrolling in the neighbourhood of Knocke, flying low, when the engine radiator was hit by shots fired from a German submarine. The aircraft was forced to alight, and having done so, it began to taxi towards Holland, but, before it had gone far, it was captured by a German destroyer. This is the only instance of an aircraft being shot down by a submarine.

In November, 1915, after 65 lb. bombs had come into use, a submarine was attacked by a R.N.A.S. aeroplane about six miles out from the coast, off Middelkerke. The machine was a Henri Farman and it carried two 65 lb. bombs. The attack was made from a height of about 1,200 ft. and both bombs were released together. One bomb hit the submarine amidships. There was an explosion, and she was hidden by smoke; when the smoke cleared, the submarine was seen to be sinking with her bow and stern sticking up into the air. The aircraft circled round until she had disappeared beneath the surface leaving a large patch of oil.

In 1915 a concerted attack was made on Zeebrugge harbour by eighteen British aeroplanes, seven British seaplanes and eight French aeroplanes. The British machines dropped five 100 lb. bombs and sixty-two 20 lb. bombs. One enemy submarine was severely damaged.

Volume V of *Naval Operations* gives a description of an occasion, in December, 1917, when a seaplane from Newlyn air station dropped bombs on a submerged submarine, eight miles West of the Lizard; but the results of this action are not known. Altogether 1917 was the most successful year for aircraft in their combats with submarines, and "UC 1," "UB 20" and "UB 32" were sunk by bombs from seaplanes during July and August. In the Mediterranean, aircraft were not so successful, and the same Official History mentions that a German submarine cruising in those waters was attacked time after time by aircraft without being damaged.

According to Admiral Bacon, one of the first successful attacks on a submarine in the Dover Patrol was that made by a large American

flying boat operating from Dunkirk on the 22nd September, 1917. While on patrol between 7.20 and 9 a.m., this flying boat saw a big submarine fully blown, about eight miles North-East of the East Hinder Bank. From a height of 800 ft. two 230 lb. bombs were dropped; one struck the submarine just abaft the conning tower, and immediately after the explosion she was seen to heel over and sink, leaving a large quantity of wreckage and oil floating on the water.

Many instances have occurred of submarines being reported, attacked, and damaged which are not confirmed in any official records or by anyone not actually engaged in the combat, and the difficulty of obtaining confirmation of the actual sinking of a submarine was evidently very great. For example, while serving with the Dover Patrol, Flight Sub-Lieutenant Mulock, R.N.A.S., dropped five 20 lb. bombs on a submarine, and on another occasion Squadron Commander Bigsworth, R.N.A.S., dropped three 65 lb. bombs; both believed their attacks to have been successful, but in neither case could this be confirmed.

In addition to active service attacks, peace time experiments in bombing a submarine have been carried out by the Americans. In June, 1921, the surrendered German submarine "U 117" was anchored in an awash condition, and attacked by three flying boats of the Naval Air Service. They flew in V formation and, after dropping sighting bombs, came back and dropped nine 180 lb. bombs; three from each machine. The submarine was hit, broke in two and sank. General William Mitchell, who gave a highly partisan account of this exercise, stated that the bombs "tore her all to pieces above the water, below the water, and along the water line." He adds that a vessel that had been directing the target practice—in what precise capacity he does not say—which remained about a mile and a half away from the submarine had her condenser system[1] so badly damaged that she steamed into Chesapeake Bay that night at only three knots.

Against this, Admiral Bacon sums up his own experiences of the chances when an aircraft attacks a submarine as follows:—"I am no believer in any aircraft sinking a submarine except through gross carelessness on the part of the submarine. . . . In nearly all cases I believe the submarine merely gets a fright. The fright is valuable in that it keeps the submarine below the surface, retards the voyage and worries the crew."

Turning from submarines to surface craft, let us begin with the smallest of the latter and go on to attacks on cruisers and battleships. The smallest surface craft which have ever been engaged with aircraft are undoubtedly Coastal Motor Boats. The Official History—*Naval*

[1] But see note on "Washington" experiments, p. 320.—EDITOR.

*Operations*, Vol. V, gives an account of what is one of the most extraordinary and certainly the fastest actions ever fought at sea. This occurred in 1918 off the low sand dunes of Terschelling. The day was bright and clear and Lieutenant-Commander A. L. Coke, R.N., was in charge of a flotilla of Coastal Motor Boats engaged on reconnaissance. These boats used to cruise in pairs in this region. The fight was started by eight German aeroplanes opening fire on the motor boats; the tactics of the aeroplanes were exactly what might be expected in the circumstances; they dived repeatedly on the motor boats from astern, firing with machine guns synchronised in the line of flight. On overtaking the boats they zoomed up on a turn to come round again and repeat the performance. The motor boats were moving through the water at well over thirty knots, and the aeroplanes must have been flying at ninety or a hundred knots during their diving attacks. Sometimes the aircraft dropped bombs, but these failed to take effect. So far, the flotilla had held its own, and one German machine had been seen to come down, probably damaged. But, with Ameland lighthouse abeam the flotilla had to turn to the westward, and this put them at a disadvantage, for the aircraft had the sun behind them; moreover, four small fast aeroplanes—probably single-seater fighters—joined the others in attacking the motor boats. According to Lieutenant-Commander Coke, these machines "caused more trouble and did more damage than the eight that had previously appeared." From then onward the boats suffered severely. With guns jammed and ammunition nearly all gone they were unable to return effective fire, and the German machines flew over at point blank range. One of the aeroplanes was hit by the last few rounds fired from one of the boats and crashed into the sea; but after that no reply at all could be given to the aerial attacks. Engines, which had been called upon for a comparatively long period at full power began to fail; in one boat a bullet had pierced the smoke apparatus, and the crew were half stifled with the fumes; another was so riddled that, according to the Official History, "one could almost see through the side in places." The flotilla at this time was between three and four miles from land. One boat reached the shore where the Dutch authorities took charge of her. A Dutch torpedo boat took two others in tow, while the remainder were sunk in deep water. Not one of the flotilla returned. Curiously enough, while this little British force was suffering so severely at the hands of German aircraft, not far away Lieutenant Cully, R.N.A.S., was engaged in his memorable duel with "L.53," which resulted in the destruction of that airship.

Instances of actions between aircraft and destroyers are more rare than one might expect considering the extent to which the latter were used, especially for convoy work. In May, 1917, a formation of four

Handley Page bombers of the O/400 type, found five hostile destroyers at sea and attacked. They sank one destroyer and damaged others by bombs, though the extent of the damage is not recorded. This squadron of Handley Pages was used for daylight submarine patrol along the coast as far as Zeebrugge, and the engagement with these destroyers was one of its first successes. The sinking by air attack of one destroyer and the damaging of another in Zeebrugge harbour were verified by the Aircraft Bombing Committee after the Armistice. Several torpedo craft were also damaged in the harbour at Bruges. Another fully verified victory for aircraft occurred on 21st July, 1918, when a formation of D.H.4 aeroplanes of No. 217 Squadron attacked four torpedo boats ten miles off Zeebrugge, and scored a direct hit on the stern of the leader with a 230 lb. bomb. The torpedo boat was found at Bruges by the Committee referred to above with the stern blown off.

After the War, the German destroyer " G.102 " was used by the U.S. Navy for bombing experiments. The vessel was attacked by twelve Martin bombers, each of which was loaded with six 300 lb. bombs. The aircraft flew in line astern, and dropped their bombs ; the destroyer was hit, broke in the middle and sank.

In Vol. IV *Naval Operations*, mention is made of an attack by Austrian aeroplanes upon British cruisers. There were seven or eight Austrian aircraft, and, although they were engaged by Italian aircraft from Brindisi, they were not diverted from their object. They dropped two bombs close to H.M.S. " Dartmouth," and also attacked with their machine guns ; but neither the bombs nor the machine gun fire did any damage. During the operations against Cuxhaven in 1914 British light cruisers and destroyers were attacked by a Zeppelin, but the airship did not secure a single hit. The light cruiser " Attentive " was bombed by a German aeroplane in 1915 ; the attack was made from a height of about 8,000 feet, the ship was hit, two men were killed, seven others injured and a gun was put out of action. In 1918, the " Furious " and the light cruiser forces were bombed more than once by hostile aircraft ; but again there were no casualties.

In July, 1921, the German cruiser " Frankfurt " was used by the U.S. Navy for bombing experiments. This ship had a 6-inch belt, 1½-inch deck armour, water-tight compartments and bulkheads. The bombs used were of various sizes, the object being to observe the effects after each attack. For the first trials 100 lb. bombs were used ; afterwards 300 lb. bombs. Neither of these attacks sank the vessel, although General Mitchell says that the 300 lb. bombs would have done so if the tests had not been called off in the middle. A squadron of aircraft carrying 600 lb. bombs was then detailed to continue the trials.

Again the attack was made in line astern. At the first direct hit on the " Frankfurt's " deck fragments of steel were thrown over the water for more than a mile ; the ship heeled over and sank, bow first.

The number of experiments in bombing battleships exceeds those with any other class of warship ; but before drawing any conclusions from these results, it is worth recalling some remarks on the subject by Rear-Admiral Beamish. Speaking in Parliament on the Naval Estimates, he said : " It is not the slightest use quoting cases one hears of in which battleships are moored and a large number of active and keen young men armed with aeroplanes and heavy bombs go up to destroy them. Of course they can do that, but it is quite another story if a ship is steaming and thoroughly well armed with anti-aircraft guns." Since then, exercises have been carried out with the ships steaming ; but anti-aircraft fire has never been and can never be included, nor can its effects be accurately gauged. The " Agamemnon," the " Centurion " and the " Marlborough " were the vessels attacked in the British trials, while the " Ostfriesland " and the " Washington " were the chief battleship targets used by the Americans.

It will be recalled that during the " Agamemnon " trials, the ship was under weigh and steaming about 10 to 12 knots. The first test showed only 10 hits out of 223 bombs dropped. The second test in 1924 showed no hits out of 114 bombs dropped. The bombs were dummy nine pounders and the average velocity of the wind was 35 m.p.h. The height from which the first bombing was done was 8,000 ft. The results could not be regarded as satisfactory from the point of view of air attack, but since that date there is every reason to believe that both sights and methods have improved very much indeed. Later British trials have, for the most part, been regarded as confidential. Incidentally, it will be remembered that it was the " Marlborough " which was torpedoed during the battle of Jutland. She was struck eighteen feet below the water-line and her bottom was damaged for a length of seventy feet and a width of fifty feet at the widest part. It has been estimated that to produce such results as these it would be necessary to drop at least a 500 lb. bomb and explode it under water close alongside the ship—not an easy thing to do.

The bombing of the " Ostfriesland " was one of the earlier series of American experiments already mentioned. The trials began in July with small size bombs. These did a certain amount of minor damage on deck. The culmination of the experiments was the attacks with 1,100, and finally with 2,000 lb. bombs. Five 1,100 lb. bombs were dropped by five aeroplanes flying in line astern ; two hit the water alongside the ship, and three hit the ship. These did not sink the

" Ostfriesland," but she listed badly and had to be re-trimmed with water before the test was resumed next morning. Seven aircraft armed with 2,000 lb. bombs then attacked in line astern. Four bombs fell in the water alongside, and the " Ostfriesland " turned over on her side ; in two minutes she was going down by the stern, and in three she was upside down ; she then sank slowly, stern first.

It was during this series of trials that the old U.S. battleship " Alabama " was also attacked ; a single 2,000 lb. bomb sank her in thirty seconds.

The results of these earlier American experiments are, however rather discounted by Admiral Niblack, U.S.N. In his account of the tests made on the hull of the battleship " Washington," published in *Brassey's Naval and Shipping Annual* for 1926, he expresses the view that of the various experiments carried out by the U.S. Navy, these latter are the only ones on which to base data with safety, because the construction of the hull of the " Washington " embodied all experience up to that date.[1] On the first day the five tests consisted of exploding bombs alongside in order to get the depth charge effect. Two 2,000 lb. bombs were exploded close enough to " throw tons of water on board." The two tests which followed represented the explosion of a modern torpedo war head of 400 lb. at a distance of 13 ft. below the water line in contact with the outer hull, and the fifth test was the exploding of a 2,000 lb. bomb to ascertain the " depth charge " effect. The Board estimated that the ship could have survived the explosion of eight torpedoes, if distributed about the under-water part of her hull. The air bombing test was in many ways unsatisfactory. In the first place a 14-inch shell was used instead of a bomb. The shell weighed 1,440 lb. and was dropped from 4,000 ft. Eight attempts were made to hit the ship with these shells ; but none was successful ; then another aeroplane succeeded at the fourth attempt. The shell was launched point downwards but failed to penetrate. Those with a knowledge of aero-

[1] The U.S.S. " Washington " was one of the " West Virginia " class of battleships, and was scrapped before completion under the Washington Treaty. She displaced 32,600 tons, and had an armoured belt of 14–16 inches tapering to 8 inches at the after end, and a 3-inch armoured deck. For purposes of the test the ship was ballasted to draw 25½ ft, and all watertight sub-divisions were completed up to the third deck, which was about 5 ft. above the water-line. The deck plating over the two engine rooms was not in place, and only bolted down over the motor room. The third deck was open to all boiler rooms, motor rooms and machinery spaces. Both condensers were installed. The latter were minutely examined after the trials, and disclosed no injuries as the result of either bombs or of torpedo explosions set off directly against the hull. A full account of this experiment is published in *The Journal of the United States Naval Institute Proceedings* of April, 1925, page 636.—EDITOR.

dynamics will wonder why shells should have been used, and also at what angle they struck the deck, the fact that they were released point downwards being no guarantee that they would maintain that position, especially with a non-streamline body. The " Washington " was finally sunk by gunfire after receiving fourteen hits from 14-inch shells fired at oblique impact. The vessel sank two and three quarter hours after fire had been opened.

Experience in bombing capital ships under active service conditions is very meagre ; but it is of interest to note that the first engagement between a warship and an aircraft occurred before the War, when in 1913, the Greek airman Mutusis set out from Mudros Bay in a seaplane to reconnoitre the entrance to the Dardanelles. He sighted the Turkish squadron and dropped four bombs on the ships but failed to obtain a hit. He and his observer were in the air for what was then the exceptionally long time of some two and a half hours, and covered about 112 miles. Eventually they came down at sea and were picked up by a destroyer.

In 1915 the old Turkish battleship " Barbarossa," lying off Ak Bashi Liman, was bombed and hit. Eight men were killed by this attack but there appears to have been no other serious damage.

In the whole range of active service work the bombing of the German battle cruiser " Goeben " is the classic example of failure of air attacks under conditions favourable to aircraft. In January, 1917, the " Goeben," after raiding Imbros in company with the " Breslau " and sinking the British monitors " Raglan " and " M.28," was returning to Constantinople when she struck a mine. She was beached off Nagara Point in the Dardanelles, where she was repeatedly attacked by British aircraft and submarines. But both forms of attack failed to disable her, the bombs doing " practically no damage," according to official records, although they " made salvage work extremely difficult." In these operations against the " Goeben " 270 flights were made and over 15 tons of bombs dropped. The weather was often poor, with low clouds and bad visibility. The bombs used were 100 lb. (light case) and 112 lb. (heavy case). Only two hits were reported, one on the net shelf and one on the funnel casing, neither causing much damage.

The foregoing is a summary of such evidence as has been made public of the relative powers of aircraft and warships up to the present. It is perhaps worth quoting the views expressed by two well-known authorities. Sir Eustace D'Eyncourt, when he was Director of Naval Construction, read a paper before the Institution of Naval Architects in 1922 in which he expressed the view that the decks of battleships could be armoured so as to be able to withstand modern gunfire at long

range or "any bombs of weight which can at present be carried." In 1924, Sir William Berry, his successor, said that deck protection which was effective against shell attack would also be effective against bomb attack.

It is quite obvious that of all craft the battleship is best able to withstand and reply to air attacks. Not only is she far better protected than any other type of warship, but she has a more powerful battery of anti-aircraft guns, while in a seaway she is a better gun platform than a cruiser or destroyer. Admiral Niblack, summing up the results of tests with a towed target, says that in defending a battleship against aircraft the anti-aircraft gun which is always ready for use probably holds first place, and that as it improves in design and skill in use it will in the end be found quite efficient to ensure reasonable security to a ship against bombing attacks. This was the finding of a Special Naval Board assembled at Washington. It has been argued that the effect of the explosion under water of quite small bombs is sufficient to perforate the comparatively thin bottom plating under the armour, which will result in one or more watertight compartments being flooded and necessitate the ship being docked. Against this is the great difficulty of dropping and exploding a bomb at the exact distance from the ship's bottom and at the exact depth at which it will have the best effect, coupled with the fact that modern battleships and the larger cruisers are protected by "bulges" which can sustain much damage without the ship herself being incapacitated.

The air enthusiast will, doubtless, insist that given sufficient aircraft carrying bombs of sufficient size and equipped with the latest sights, no amount of anti-aircraft fire will prevent a determined attack from getting home, and that under these conditions the unsinkable ship does not exist. But, as has been said, time and another war alone can show whether this really is the case.

# FLYING BOATS AND THE WAR AT SEA

By ZETES.

IN a recent lecture[1] at the Institution on the role of the flying boat in Empire defence, comment was made on the possibilities of this type of aircraft in connexion with the war at sea. Their capabilities as aircraft and their ability to assist naval forces are sufficiently well known, and need not be elaborated here; but it is of interest to inquire what steps have been taken to ensure that this particular form of defence shall bear its correct share of the responsibilities of the naval forces of the Empire.

There are at present seven flying boat squadrons in the Royal Air Force—four at home, and three abroad. The home squadrons are based at Calshot, Mountbatten, and Pembroke; those abroad at Malta, Basrah, and Singapore. The squadron at Malta, however, is one in name only, as it is equipped with Fairey seaplanes. This distribution of squadrons is, presumably, in accord with the policy of the Air Force, whose functions in Imperial Defence might be summarized[2] as follows:—

(1) Air defence of Great Britain.

(2) Control of certain territories, e.g., Aden, Iraq.

(3) Development of Imperial Air routes.

(4) Provision of aircraft for the Fleet Air Arm and the Expeditionary Force.

(5) Assistance in maintaining the control of sea communications.

Now considering only those functions in which the air is pre-eminent, particularly control under Air Force command and the development of air routes, it is obvious that their success can only be ensured by the closest co-operation between all types of aircraft. On this account it appears probable that naval strategical considerations will play only a very minor part in the distribution of those air squadrons which are best suited to assist the Navy in maintaining the control of sea com-

[1] "Flying Boats in Empire Defence." By Wing-Commander R. M. Bayley, D.F.C., R.A.F.—JOURNAL of February, 1932.

[2] Report on National and Imperial Defence (Cmd. 2029).

munications. This becomes only too evident when the existing distribution of flying boat squadrons is studied from the aspect of the various stages of the war at sea.

Broadly speaking, the function of naval forces is the control of sea communications, and the operations leading to this end may be considered as being in two phases. The first is concerned with operations when the question of the control is in dispute. These call for the concentration of our naval forces, and culminate in the neutralization or destruction of the enemy's heavy naval forces. The second phase includes those operations, termed the exercise of control, which are necessary if we are to reap the full benefit of our control of the sea communications. Such operations necessitate a large dispersion of naval force, and are mainly the concern of flotillas, by which is meant light craft of cruiser size and below.

Let us now consider the correct distribution and employment of the flying boat squadrons so that they are utilised to their best advantage in these two phases of the war at sea.

The operations in the first phase can be dealt with fairly shortly. The air requirements of the fleet can, at present, only be met by aircraft which actually accompany the ships. Flying boats, owing to their limited endurance and unseaworthiness when compared with surface craft, are, in the present stage of their development, unable to meet these requirements.

The operations in the second phase call for a more detailed explanation. They are concerned with the throttling of enemy national life at sea and the maintenance of our own sea-borne supplies and communications. It will suffice here to outline very briefly our traditional policy whereby this is effected. There are certain well-defined areas in which important trade routes either cross or terminate. Our policy is to hold these areas in strength while leaving the intervening routes undefended. This has necessitated the establishment of naval bases in various parts of the world from which the forces exercising control may act. Owing to Treaty limitation and the policy of successive British Governments there is a large gap between the forces available and the forces necessary to effect this policy. This gap could be filled to a considerable extent by flying boats; they are ideal craft for such work, but it must be remembered that their greatest value can only be obtained in intimate co-operation with surface craft. It is almost platitudinous to say that such co-operation can only be secured if they work from bases which are either the same as or close to the bases of those craft. It is idle to suggest that the large increases in the range and endurance of flying

boats lessens their need for bases. In practice, endurance has never yet been found to be a substitute for a base. Therefore one would expect to find the flying boat squadrons in the vicinity of the naval bases at Malta, the Cape, in the West Indies, and so on ; those strategical centres which must be held by the naval forces if the security of our sea communications is to be maintained. Where the boat squadrons are stationed has already been pointed out, and the reason is not far to seek. The maintenance of sea communications is not a direct responsibility of the Air staff. They are more concerned with such problems as improving the strategic mobility of the Air Force and its corollary, the development of air routes.

The present distribution of flying boats appears to be governed by questions of that nature alone, and the fact that there are such squadrons at Malta, Singapore, and in home waters has little naval significance. Malta has already been dealt with. Singapore is a flying boat base, because in future it will be at the junction of important air routes; it is merely coincidence that it has a future as a naval base. As regards the squadrons in home waters, they are used for training, as it is obviously cheaper and more efficient to do this at home than abroad. But this question of training raises issues which are even more important. It might be argued, with a certain appearance of truth, that the strategical disposition of flying boat squadrons could be altered in time to deal with any emergency. The fallacies of this argument are exposed, however, when another aspect of the problem, that of training the personnel, is studied. Training can only be dealt with before the emergency arises. We appear to be fast forgetting the lessons learnt during the last war at sea. The submarine campaign showed us once again how necessary it is that all arms of a Service should have an intimate knowledge of each other. Yet in these days, apart from a periodical submarine exercise, there is little or no co-operation between the flying boats and the ships of the fleet. The few exercises that do take place are invariably unsatisfactory from the naval point of view. By way of illustration, let us recall a statement that in future wars flying boats will " visit and search." This may or may not prove to be practicable, but if it should, then it is suggested that unless the average flying boat pilot is given more opportunity of becoming acquainted with life at sea, success will not crown his efforts in that direction. The next war need not be like the last one ; succeeding wars seldom are. In the last struggle, it was comparatively easy to direct neutral shipping into near-by harbours and to deal with it there. We shall be extraordinarily fortunate if this policy can be carried out again. If it should prove possible, this extremely important duty will have to be performed by the flotillas, aided, we hope, by the flying boats. In any case,

everything points to the fact that co-operation between flying boats and surface craft must be far closer than it is at present.

Unfortunately, as has been pointed out, the Air Staff is little concerned with the maintenance of sea communications, and the Air Force and Navy have conflicting claims for the services of flying boat squadrons. The result is that we find them based in areas which are not of vital naval importance and where they seldom get in contact with naval forces. Furthermore, the Navy has no safeguard that the air personnel in these squadrons may not, at any time, be withdrawn by the Air Staff for service in other spheres, to the complete disregard of the situation at sea. Then there is the question of training; from the naval point of view this is extremely inadequate, and is the underlying cause of the unsatisfactory nature of the few exercises that do take place between flying boats and naval forces. When the existing small nucleus of officer personnel with war experience in flying boats disappears, as it is fast doing, this state of affairs will be even more deplorable.

What can be done to remedy the defects in the existing disposition and training of flying boat squadrons from the point of view of the war at sea? Flying boats are essential to the Navy—as essential as cruisers, destroyers, and submarines. They are equally essential to the Air Force. One particular boat squadron cannot, however, serve two masters. Its services must be controlled by the authorities of one Service or the other if the best results are to be obtained. It is almost ludicrous that an important air requirement during a vital phase of naval warfare should have to be met by another Service. Divided responsibility, although at times a necessary evil, must be avoided. The Air Force must be relieved of its obligation to assist directly in the maintenance of sea communications; it is more concerned with other problems. The Fleet Air Arm must not be limited, as, for all practical purposes, it is at present, to meeting the air requirements of a fleet action; its activities must be extended to embrace all the air requirements of the war at sea. Only thus can the vast potentialities of the flying boat for naval defence be developed to their maximum, and training be so co-ordinated as to enable them to take their rightful share of the responsibilities of the sea forces.

# THE ROYAL AIR FORCE SECTION OF THE MUSEUM

*"The Air Council note . . . with satisfaction, the assurance that the principle is accepted of giving the interests of the Royal Air Force equal weight with those of the Royal Navy and of the Army."*—Extract from a letter received from the Air Ministry, February, 1932.

SINCE the early days of the creation of the Royal Air Force, the Council have pursued the policy that, so far as is possible, the interests of that Service shall be regarded as being incorporated in the work and traditions of the Institution equally with those of the older Services. But it is only quite lately that it has been possible to make an appreciable start in building up a *permanent* Section of the Museum devoted to exhibits connected with the Royal Air Force, and the history of Service aviation.

It is the intention of the Council that this Section shall form the nucleus of a collection which, in course of time, will be as representative of the history and traditions of the Air Force as the rest of the Museum is of those of the Navy and Army; and the Air Council were recently so informed. The letter quoted above conveys official approval and appreciation of this decision.

## Aircraft Models

The Institution is indebted to a number of manufacturers of aircraft for gifts of models—all to the scale of ½ inch to 1 foot—which are now on permanent exhibit here in suitable dioramic settings. These include Vickers' "Victoria," "Southampton," "Vilderbeest," Schneider Cup Winners: "S.5" (1927) and "S.6B." (1931); Fairey III. F., Fairey Fox; Blackburn "Ripon"; Bristol Monoplane M.I.C. (1915); and an "Autogiro." Other models have been promised.

## Full Size Exhibits

The Section includes a full-size pilot's cockpit, the controls of which reproduce the correct movements in a model aeroplane suspended above.

There are also representative types of bomb racks, and a scarf ring with a pair of Vickers aerial machine guns.

A fine collection of bombs, presented by the Air Ministry includes representative types ranging from 1,350 lb. to the smallest smoke bomb.

### Historical Relics

The collection of historical air relics, although small as yet, contains some very interesting exhibits. Amongst these are typical British, French and German bombs; a blade of the huge propeller of the Zeppelin "L.85" shot down at Salonika on 5th May, 1916; and other mementoes of the Great War; and the compass by which "R.34" made the first trans-Atlantic flight.

### Pictures

It is hoped to make a collection of pictures which will represent the development of Service aviation from earliest days, and gifts and loans have enabled a start to be made on this project.

### Additions to the Section

Royal Air Force and other Members are invited to add to this new Section of the Museum; bearing in mind, however, that with the existing severe restrictions on space preference must be given to small and exceptionally interesting exhibits.

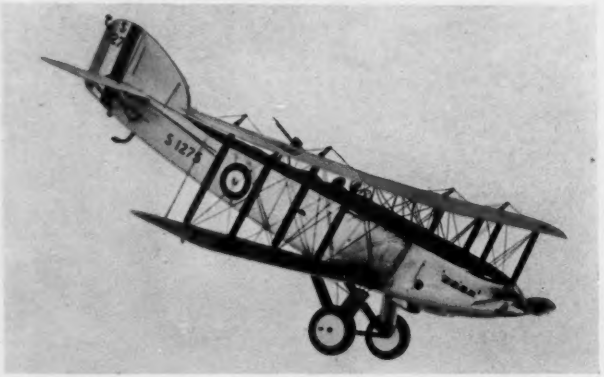


VICKERS " SOUTHAMPTON "

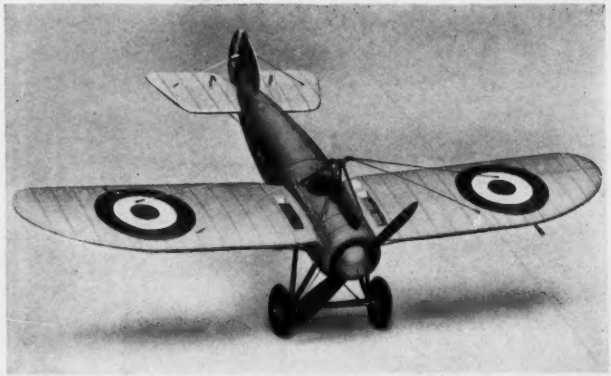


VICKERS " VICTORIA "

*Photographs by courtesy of Models Manufacturing Co.*



FAIREY 3 F.



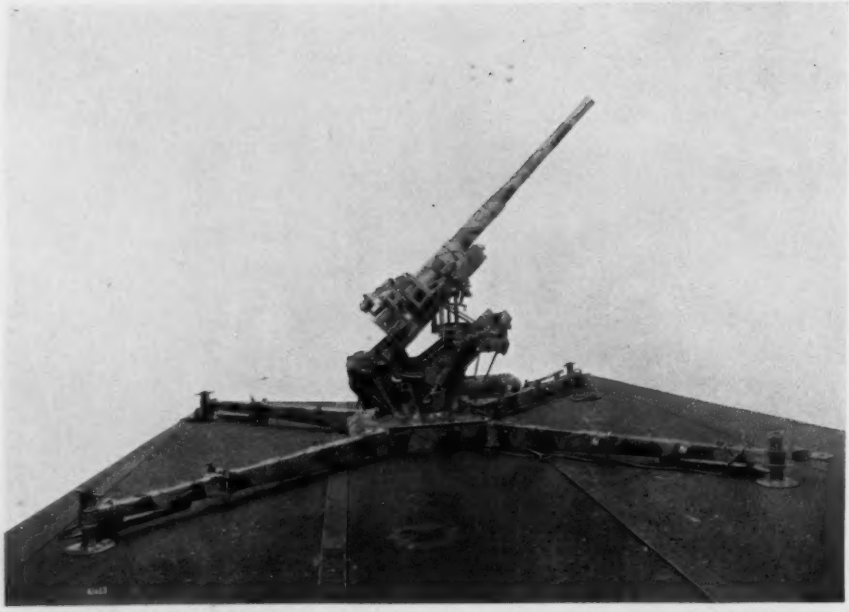
BRISTOL MONOPLANE (1915)

## ROYAL AIR FORCE SECTION OF THE MUSEUM.

**SOME MODELS PRESENTED BY THE AIRCRAFT MANUFACTURERS.**



THE GUN AND CREW ON THE ROAD



THE VICKERS-ARMSTRONGS 75 m/m A.A. GUN IN ACTION POSITION

## A MODERN ANTI-AIRCRAFT EQUIPMENT

*By courtesy of Messrs. Vickers-Armstrongs.*

# ANTI-AIRCRAFT GUNNERY

## I. By a Pilot.

A NUMBER of articles, written by gunners and others, have been published lately on anti-aircraft gunnery, and the subject is one which the present writer has discussed with officers of the sister Services. The general impression left on the mind is that gunners hold that there has been a very great improvement in this form of artillery, and, therefore, the experience of the late war may be very misleading. They seem to feel that gun and small arm fire from the ground is not accorded sufficient status in defence schemes, particularly by Royal Air Force personnel. They suspect that the Air Force pilot, clinging obstinately to his war experience, both himself believes, and teaches the younger generation, that the A.A. gun is a nuisance, and may at times be alarming, but, provided that simple precautions are observed, it need not be taken very seriously. They argue that, for such as hold these views, there will be a rude awakening. A further complaint is that the Royal Air Force, during Army manœuvres and other tactical exercises, ignores gun and small arm fire from the ground, and impudently carries on as if it did not exist. This, it is held, introduces so serious an element of unreality into such exercises that the part played by aircraft is apt to be exaggerated, and this may lead to disappointment if the same performance be expected in war. Finally, there seems to be a belief that A.A. fire, even though it does not destroy or bring down many aircraft, will, if it reaches a sufficient standard of accuracy, act as a deterrent, and cause aircraft to turn back and abandon their object.

It is proposed to examine these claims from the pilot's point of view, and in doing so it is not intended to take into account the advantages which aircraft can derive from clouds, mists and bad visibility, both as regards concealment and added possibilities of surprise. It will be assumed throughout that the weather is clear, and, therefore, most favourable to A.A. gunnery.

### THE TARGET.

First of all, the improvement which has taken place in A.A. gunnery is patent to anyone who has had the opportunity of seeing modern A.A. practices. The accuracy of fire from fixed defences is, for various reasons, almost certainly greater than that from a mobile layout in the

field, or from the A.A. armament of a ship; but that there is all-round improvement is unquestionable. It can even be admitted that if an aircraft continues to fly absolutely straight and level at a constant speed in clear weather or with a background of high cloud, and within easy range of an A.A. battery, it will probably be hit; and, that if it is hit, it is possible that it will be brought down. Even supposing that the aircraft, in such circumstances, is almost certain to be brought down, this would not be very serious from the pilot's point of view; and it is still possible to contemplate with calmness that A.A. fire will improve until such a standard is reached, for the question which immediately arises is need the aeroplane ever fly in this obliging manner? The answer is, unfortunately, that there is *one* occasion on which it must do so, and that is when running up to a target using a bomb sight. Then it is necessary to maintain a straight and level run of about a mile. This is a disadvantage, for it means that there will be the maximum danger from A.A. fire at a most critical moment, when the bomb aimer should be coolly and carefully operating his sight, and the pilot should be concentrating all his skill on flying his aeroplane straight and level. The accuracy of bombing is likely to be seriously diminished, if the aircraft during the "run up" to the target be subjected to accurate and heavy A.A. fire; but this disadvantage may not always remain, and it should not be an unavoidable condition of accurate bombing, although it is a necessity with present day equipment. At no other time is it necessary for an aeroplane or a formation to fly straight and level at a constant speed, unless we except photographic air survey of unmapped country, which is not likely to be necessary in the face of organised A.A. defences. At all other times aircraft and formations could and would alter course, height and speed constantly, and a very small variation is all that is required to keep A.A. gunfire at a safe distance. At worst, a straight run of a mile takes only about 25 seconds—not a very long time for the gunner to secure a hit on an aeroplane.

Consider the conditions when an aeroplane is travelling at, say, 150 m.p.h. at 10,000 feet. Suppose that the effective diameter of the shell burst is 30 yards, and that the time of flight of the shell from the gun to the point where it bursts is 20 seconds. The A.A. gunner must so lay his gun and set his fuze that his shell will burst within 15 yards of a target which will travel four-fifths of a mile *after he fires his gun.* An alteration of course of five degrees at the moment the gun is fired will cause the gunner to miss by about 120 yards. Remember also that there must be some dead time in the setting of the fuze of the shell; because it must be set, and the shell must be placed in the gun, and then the gun must be fired. This dead time is about 10 seconds. Meanwhile, the target, which has freedom of movement in three

dimensions, is travelling at 220 feet per second. The faster the aeroplane flies, the greater is the distance which it will cover after the fuze has been set and the gun fired, and the smaller the deviation from straight and level flight needed to result in the shell bursting outside effective range of its target.

At 10,000 feet the radius of effective range of an A.A. gun is some 6,000 yards. If an aircraft, flying at 150 m.p.h., passes exactly over the gun, it will only be within range for about 2.8 minutes. There are a number of things to be done before the gun can come into action. First, the aeroplane must be spotted; next, it must be identified as hostile, and thirdly, it must be indicated to the men working the height-finder. All this must take time, and if there is the slightest hitch or delay, the gun may quite possibly miss so fleeting an opportunity.

In the days of the late War, aircraft formations were, more often than not, hard up against their ceilings, unable to climb, and unwilling to lose height owing to the difficulty of regaining it. They flew as high as possible, not so much out of respect for A.A. gunnery, but because height gives the initiative in air fighting. Again, because they were up against their ceilings, they had no speed range. They had only one speed, which was necessarily a slow one—the speed which enabled them to maintain their height. They therefore had only one resource to outwit the gun, that of small alterations of course. Yet it sufficed, and the number of aircraft brought down by A.A. fire in the late war was very small. The modern formation, with its very high ceiling, and tremendous speed range, suffers from no such disadvantages. It can climb, turn or alter speed at will, though I am bound to admit that if enemy fighter aircraft are numerous, formations will usually fly both high and fast. They will, however, have much more liberty of action under the worst conditions than did the formations of the late war. As the speed and climb of aircraft improve, as they do improve every year, so the difficulties of the A.A. gunner increase, for he cannot shorten the time of flight of his shell appreciably without adding to his difficulties in other ways. A shorter time of flight would involve a corresponding increase in muzzle velocity, and a heavier charge; the former would mean more rapid wear of the gun, while the latter would necessitate increased weight and bulk of the ammunition, which would tend to reduce rate of fire and mobility. So far, then, from the chances of the A.A. gun bringing down aircraft having improved since the war, they appear to have been reduced, while the continued progress in the relative increase in aircraft speeds over the time of flight of the shell will tend to minimise the chances of the gun still further.

### SMALL ARM FIRE.

Small arm fire from the ground is, admittedly, only effective when an aircraft is flying low, but if the air can be filled with bullets from rifles and machine guns, it is possible that the plane will be hit. But consider the enormous asset of surprise possessed by the aeroplane. Imagine that it is carrying out a low-flying attack on a marching column; it is seen when it tops the trees, half a mile ahead, flying at 180 m.p.h. at 150 feet; it leaps at the column of troops, flying down the road at 264 feet per second, dropping anti-personnel bombs and firing its machine guns; in 20 seconds the attack is over, and the aeroplane is just disappearing over a slight ridge half a mile down the road. Will the column have got its rifles, let alone its machine or Lewis guns, into action in this brief space of time? Aeroplanes are not going to fly round and round troops or defended areas at convenient heights for the A.A. or S.A. marksman. Low flying attacks of modern aircraft will be over in a flash, and probably few other than the anti-aircraft sentries will have time to open fire at effective ranges.

### A.A. GUNFIRE FROM SHIPS.

The ship suffers from three drawbacks for effective A.A. fire which are not found on land: in the first place, aim is liable to be affected by unexpected movements of roll and by blast from the main armament, while allowance must be made for her own course and speed; secondly, the masts, rigging, wireless aerials and general top-hamper all tend to limit the arcs of fire of the A.A. guns; finally, the threat of surface or under-water attack is likely to distract attention from the air. For these reasons, the ship will probably be comparatively easy to surprise by air attack. On the other hand, she can mount a heavier A.A. armament than can, generally, be brought into action on land because the question of mobility does not have to be considered. This means that the effective range will be greater, and so will the effective radius of the shell burst, but the rate of fire will be less than from land artillery. As compared with fixed defences on land, the ship has a much more difficult task, and it is reasonable to suppose that her A.A. fire will not reach the same standard of accuracy.

To sum up, we find that if aircraft fly straight and level at a constant speed within convenient range of hostile A.A. guns, they are in grave danger of being hit. We have seen, too, that if they loiter in the vicinity of concentrations of hostile troops at conveniently low heights, they run a serious risk of being brought down. But, with the one exception of bombing referred to above, there is no need for them to do these things, which form no part of their functions if they are correctly employed. A.A. or small arm fire cannot be ignored, but if a pilot takes

proper care to alter course and height, constantly and irregularly, and to make use of surprise in low flying attacks, he may rest assured that he is in no very great danger. The stray shell or bullet no man can guard against, but the pilot who exercises due care can carry out his duties with reasonable expectation of a safe return to his aerodrome. In war time, he will ask for nothing more.

It appears that the opinion is sometimes held that if the pilot is forced to make continuous small alterations of course and height, he will be placed in a position of some difficulty. This is certainly not so. It takes much experience and concentration to fly an aeroplane straight and level at a constant speed for a mile or more. It is the easiest thing in the world for the pilot to permit small and irregular alterations of course and height, and in war time, pilots will do so quite automatically after a very little practice. In fact, it is suggested that, from the pilot's point of view, A.A. gunfire must be regarded as a nuisance, which may at times become alarming, but that it need not be taken very seriously as long as he exercises due precautions ; moreover, it may be said that this is a very proper attitude for the Royal Air Force, as a Service, to adopt.

### ARMY MANŒUVRES AND TACTICAL EXERCISES.

No one will deny that Army manœuvres and tactical exercises in which troops or ships and aircraft co-operate are necessarily unreal to a very large extent. The bullet and the shell are absent, and the most intelligent umpiring can never be a satisfactory substitute. On the other hand, the 100 per cent. safety requirements of the Royal Air Force under peace conditions restrict the operations of the aircraft, and risks that would not be noticed in war are too great to be permitted in peace time exercises. For this reason, it is always unwise to attempt to base hard and fast tactical rules on the conclusions drawn from such exercises. They have great value both from an administrative and operational point of view, but we must never forget that neither bullets nor shells nor bombs are there. It is probably true that pilots go about their work very much as though A.A. gunfire and small arms fire did not exist, and that they do not take sufficient care to fly on erratic courses, or to keep out of range of hostile fire when waiting about for something to happen. But what is the alternative ? Obviously, we ought not to say to them " You must be very careful not to go near the enemy ; because, if you do, he will certainly shoot at you." Surely, the correct attitude for the pilot towards hostile fire from the ground, can be summed up in some such words as these : " be bold ; do what you have to do, but do not waste time about it ; take every opportunity to make your arrival a surprise ; do not suppose that you are under fire until you

have definite evidence of it, but do not fly straight, level and at a constant speed whenever there is the slightest likelihood of it ; keep your mind and your aeroplane moving at high speed ; remember that the effect of A.A. fire is chiefly moral."

## THE DETERRENT EFFECT OF A.A. FIRE.

" Remember that the effect of A.A. fire is chiefly moral." This is a good text on which to discuss the claim, that, " although it may not destroy many aircraft, if A.A. fire reaches a sufficiently high standard of accuracy, it will act as a deterrent, and will cause pilots to turn back and abandon their object."

A little reflection will show that the only way of stopping air attack completely is, indeed, to bring about a collapse of the morale of the personnel engaged in it. The air defences cannot erect a barrier which the attacking aircraft cannot cross, nor can all the raiders be shot down by A.A. fire and fighter aircraft. But, unquestionably, if the defences can destroy so many aircraft that the survivors feel that they only escaped by a miracle, and that the next time they attempt a raid they, too, will join the immortals ; if, in fact, they can be made to feel that the odds are heavily against their returning from their next raid, then their morale will collapse, and the air offensive will be broken. But to achieve such a collapse in civilised personnel of high morale, fighting for their nation's existence, a very high rate of casualties must be produced. Mere inconvenience or a feeling of apprehension when penetrating a defended zone will not be sufficient to bring it about. We must remember that the zones which it is possible to defend by A.A. fire are relatively small when compared to the undefended areas, and that fast aircraft pass through them very rapidly. Few men enjoy a visit to their dentist, but all but a small number of obstinate spirits do go to him when they feel it is necessary. As often as not they find that the dreaded half hour is not so bad as it seemed when viewed in anticipation. Experience has shown that much the same applies to flying through A.A. fire.

## THE PILOT'S POINT OF VIEW.

Let us examine the realities of the position from the pilot's point of view. At the worst a shell may secure a direct hit on the aircraft and explode, blowing the whole machine and crew to bits in the air—that is, in the nature of things, a rare occurrence—and although the present writer has seen it happen once, hundreds of pilots went through the War, and never saw an instance of the kind. Next, the shell may burst so close that the aircraft is wrecked, and the crew wounded ; the aircraft will fall out of control to the earth, but the crew may be able to escape by parachute and reach the ground safely. Thirdly, the aircraft may

be so damaged as to be uncontrollable, while the crew are unhurt; in this case, they can almost certainly leave the aircraft by parachute and make a safe landing. Lastly, a stray fragment from a shell may kill or injure the pilot or a member of the crew without seriously damaging the aeroplane; this belongs to the category of bad luck incidents which no normal person worries about. It is true that personnel may be attacked when parachuting to earth, but that is not very likely; it savours too much of killing in cold blood, and if they are over enemy territory it is practically equivalent to slaughtering prisoners of war. It is clear, therefore, that the parachute is of great value in the two most probable classes of damage from A.A. fire, and may, therefore, be regarded as a strong buttress to the morale of the pilot engaged in penetrating A.A. defences.

It is worth noting that some foreign Powers, France among them, appear to rely a good deal on A.A. fire for stopping air attack. The recent French air manœuvres seem to show that their ideas of air defence are running along what might be termed second class lines. They appear to favour territorial A.A. gunners, smoke screens to hide important centres—a doubtful form of defence—training of the population to suffer air bombardment with resignation, and a good ambulance and hospital service. The full scope of their defence measures, however, seems to suggest that they, too, have lingering doubts as to the stopping power of A.A. fire.

## CONCLUSION.

Our general conclusions on this subject of anti-aircraft gunnery, may, therefore, be summarised as follows:—

(1) Although the accuracy of A.A. fire has improved a great deal since the War, the performance of aircraft has improved even more, and the relative increase of aircraft speeds over the time of flight of the shell is likely to continue. In consequence, if due care is taken by the pilot to make small, continuous, but irregular, alterations of course and height, the chances of hitting the aircraft are less now than they were in the late War, and for this reason war experience is not misleading.

(2) We are adhering to the correct doctrine in teaching our pilots that their work must be done, and done thoroughly and well, in the face of anti-aircraft fire.

(3) Anti-aircraft fire, unless it is capable of producing a high degree of casualties, may discourage aircraft from loitering in defended zones, but it will not act as a serious deterrent, while the provision of parachutes should make the pilot's morale in the face of A.A. fire firmer to-day than it was in the late war.

# ANTI-AIRCRAFT GUNNERY

II. By A GUNNER.

WHILE no careful student of war will underestimate the enormous offensive power of aircraft, it is wise to temper enthusiasm with caution and to remember the ancient platitude that it is only a question of time before each new offensive weapon is countered by the progress achieved in the perfection of its antidote. The increased respect for A.A. artillery now evinced by those well qualified to pronounce opinions on matters appertaining to the air is significant.

In an interesting article entitled " The Strategic Role of Air Forces," which appeared in the JOURNAL of November, 1931, Squadron-Leader J. O. Andrews wrote :—

" . . . since 1918 technical development in respect to predictors, control apparatus, shell and fuzes, have raised the efficacy of A.A. gunnery . . . to a plane far above that of 1918 . . . "

One other most important factor should be added to this list, namely the gun itself.

With a view to forming an idea of the extent of the progress achieved and an estimate of the results which may be expected, it will be interesting to compare very shortly the statistics of the average number of rounds required to bring down an aeroplane during the Great War, with the results recently obtained with the most modern form of mobile A.A. gun.

In 1917 the British A.A. artillery required an average of 8,000 rounds to destroy an aircraft. Early in 1918 this figure was reduced to 4,550 rounds, while at the end of the year it was as low as 1,500 rounds. The French A.A. artillery in 1916 required 11,000 rounds for every aeroplane brought down, and by 1918 had reduced this figure to 4,000 ; in this latter year they brought down 220 hostile aircraft with about 800 A.A. guns, whilst 2,758 German A.A. guns accounted for 748 Allied aircraft in the same year. Although German figures of the number of rounds for each aeroplane destroyed have not been published, they probably do not differ materially from those given above, for the French and British artillery. These figures show an astonishing improvement in a period of less than two years, but even the most favourable figure of 1,500 rounds for each aircraft destroyed represents in money an

amount out of proportion to the results achieved, and further takes no account of the cost of replacement of the guns worn out by such a heavy expenditure of ammunition.

Since the War the difficulty of dealing effectively with hostile aircraft has been intensified by the progressive increase in the speed and altitude at which they can fly. In 1918 a bombing aeroplane had a speed of from 70 to 80 m.p.h. at an altitude which rarely exceeded 12,500 ft., while to-day an aircraft similarly loaded can easily attain 150 m.p.h. at an altitude of 20,000 ft. But in spite of this the improvements in guns, fire control gear, shell and fuzes have already been responsible for a remarkable increase in the percentage of effective bursts which can be obtained against targets simulating as closely as possible those to be expected in war.

In August, 1930, a 75 mm. mobile A.A. equipment, recently perfected by Messrs. Vickers-Armstrong, carried out a shoot against a canvas sleeve-target 18 ft. long, tapering from a diameter of 4 ft. at the front end to 3 ft. at the rear end. This sleeve-target, towed at a speed of 120 m.p.h. at an altitude of about 7,000 ft., was engaged by this gun, firing H.E. shell by the indirect method of fire, the gun being controlled by the Vickers A.A. Predictor with electrical transmission gear.

The first target was brought down by the 21st round fired, the second target by the 9th round, and the third target, after being engaged with 30 rounds, although not brought down, was found to have six holes in it. It should be noted that a sleeve-target is considerably smaller in superficial area than an aircraft, and that that portion of it, namely the cable attachment of the sleeve to the aircraft, which when cut results in its being brought down, is very small indeed compared to the vital area of an aircraft and the pilot.

In October, 1931, at the invitation of the Belgian Ministry of Defence, a firing demonstration with this same equipment was carried out on the Belgian coast near Ostend. The demonstration was witnessed by the representatives of fifteen foreign countries. The equipment, which was drawn by a Vickers Carden-Loyd light tractor, was brought into action at the gun position of the Belgian " Défense Terrestre contre Aéronefs," which consists of a broken concrete platform, arranged on the seaward edge of the sand dunes at Westende-Middelkerke. The equipment was manned exclusively by men employed in the offices and works of the firm, who had had three days training with it in the previous August, and who could not, therefore, be regarded in any sense as fully trained. The detachment operating the Vickers Predictor were fully cognisant of their duties, but the height-finders, operating the 3-metre Barr and

Stroud instrument, were still under instruction at the time of the demonstration.

The shoot was carried out under the direction of the Belgian authorities, the sleeve-target and aircraft being provided by the Royal Belgian Air Force. The Belgians were also responsible for the provision of meteorological data and for the safety arrangements. The whole of the equipment went through the demonstration with scarcely a hitch, and, bearing in mind that the personnel were not regular soldiers, the results obtained must be considered highly satisfactory.

The following summary of each of the five series fired gives the percentage of effective bursts obtained, those bursts being classed as effective in which the errors in elevation and direction did not exceed 10 millièmes (i.e., 50 metres in 5,000 metres).

*Series* 1—against a sleeve-target towed at a speed of 100 m.p.h. at a height of 2,000 metres and at a horizontal range of 3,000 metres—54 effective bursts out of 70 were obtained; percentage of effective bursts 77.

*Series* 2—against a sleeve-target towed at a speed of 100 m.p.h. at a height of 3,000 metres—23 effective bursts out of 57; percentage of effective bursts 40.

*Series* 3—against a Fairey Fighter aircraft, flying at a speed of 188 m.p.h. at a height of 1,500 metres and at a minimum horizontal range of 5,000 metres, the gun being laid at 180° off the target—7 bursts were effective out of 24 bursts observed; percentage of effective bursts 29.

*Series* 4—against a Fairey Fighter aircraft, engaged also at 180° off the target, flying at a speed of 188 m.p.h. in still and hazy atmosphere, which made observation most difficult, at a height of 3,000 metres, and a minimum horizontal range of 5,000 metres—23 bursts were effective out of 49 bursts observed; percentage of effective bursts 47.

*Series* 5.—At the request of the Belgian authorities, a series was fired on the last day of the demonstration to see what results could be obtained with a detachment of their own troops, untrained in the operation of the Vickers Predictor. At the time of the shoot the sky was overcast, while low clouds made it impossible for the target to be seen, except at low altitudes. In these conditions the sleeve, moving at a high angular velocity, presented an unusually difficult target. The Predictor was operated entirely by Belgian personnel, who had received a short instruction during the previous evening. The gun was served by its British detachment. The number of rounds fired was 17, against a sleeve-target, towed at a height of 450 metres, at a minimum horizontal range of 2,300 metres. Of the 17 rounds fired, it was possible to observe

only 10 rounds, all of which were effective, giving 100 per cent. of effective bursts.

It would seem that the above results indicate that the A.A. artillery of the future will profoundly influence the offensive action of hostile aircraft. Admittedly, it is impossible to arrive at a completely reliable estimate as to the actual efficacy of any A.A. equipment until it has been tried out in war, but the following particulars of the Vickers-Armstrong A.A. gun may be of interest, as indicating the lines upon which modern development in the design of light anti-aircraft equipments has progressed.

The equipment consists of a gun, mounting and firing platform on a separate axle. For purpose of transport it may either be provided with a limber or not, according as to whether it is to be drawn by horse or mechanical traction. Both the gun and limber are mounted on springs, the wheels being provided with rubber tyres. The equipment can travel comfortably over ordinary roads at speeds up to 22 m.p.h. The platform is provided with a cross-levelling gear, allowing for an 8° correction on level on sloping ground. The elevation, training and fuze receivers on the gun are connected electrically with the Vickers Predictor, and a mechanical fuze-setter is provided.

The gun may be brought from the travelling to the firing position, and *vice versa*, in two minutes by a simple rocking movement, without the use of winches or other lifting devices. The detachment consists of a No. 1 and nine men. Owing to the low height of the axis of the gun from the ground, the equipment is perfectly stable, even when firing horizontally. Such steadiness when the gun is firing anti-aircraft is, of course, essential with an instrument of the degree of precision of the Vickers Predictor, while the stability at the horizontal makes it possible for the gun to maintain accurate and rapid fire against such rapidly moving targets as tanks and armoured cars. (See Plate facing p. 329).

With the 46-calibre gun, the muzzle velocity is 2,641 f/secs., giving a maximum horizontal range of 16,000 yards and a maximum vertical range of 32,150 ft. The rate of fire is such that, with a fully trained detachment, it is possible for a section of two guns to fire a group of six rounds in five seconds.

The Vickers Predictor, from which the necessary elements for hitting the target are transmitted to the gun, is of a pattern which is already standard in the armies of Great Britain and of the United States of America. The data given to the guns consist firstly of the angles of deflection to be applied to the guns, so that the distance travelled by the target during the time of flight of the projectile, which may exceed one mile, is accurately allowed for in both the vertical and lateral planes, and secondly the correct fuze-setting, so that the shell will burst at

the target. The Predictor is complete in itself, with the exception of the heightfinder, and is operated by five men for direct fire, and six men for indirect fire. One of the principal features of the instrument, as was proved in the series carried out by the Belgian personnel last October referred to above, is that the duty of each operator can be easily and quickly learned and does not entail any knowledge of the internal functioning of the instrument.

The rapidity with which a target can be picked up and correct information produced by the instrument and passed to the guns is astonishing. Such correct information has been produced by the Predictor in five seconds from the time that the height of the aircraft has been put into the machine. Should the target disappear behind a cloud, it is possible to continue working the Predictor so as to keep the target in the field of the telescopes when it reappears from behind the cloud, providing of course that it has not changed course.

The only electrical gear in the apparatus is the transmission gear for communicating, in the case of indirect fire, the quadrant elevation, training and fuze to the guns by means of the "follow-the-pointer" system. The mechanism operates strictly in accordance with mathematical formulæ, and expresses the true relation between angular rates at the moment of observation and the future position of the target. Since electrical apparatus for use in calculating mechanism of this nature is inadmissible, mechanical means only are employed.

In the event of a failure in the arrangements for the electrical transmission of the data to the guns, the necessary information can, of course, be conveyed, either by word of mouth or by telephone, to enable the firing to continue under direct fire conditions, while the fact of continuously transmitting the correct fuze-settings to a mechanical fuze-setter on the gun enables the Battery Commander to open fire at any suitable moment.

At present it is not claimed that the Vickers Predictor is able to deal satisfactorily with air targets which rapidly change their course and altitude, but the important point as regards the effect which the presence in the field of such guns is bound to have upon the manœuvres of bombing aircraft is that, before the bomber releases his bombs, it is necessary for the aircraft to fly straight and horizontally. It is at this moment that the Battery Commander, with all the elements of fire found for him mechanically, will be in a position to fire an almost instantaneous and accurate salvo of H.E. shell with all guns.

It is clear that to bomb from the air areas protected by such means will become one of the most hazardous, if not the most hazardous operation, which aircraft can be called upon to carry out.

# NEW AIDS TO NAVIGATION AND PILOTAGE

By CAPTAIN K. E. L. CREIGHTON, M.V.O., R.N.

On Wednesday, 20th January, 1932, at 3 p.m.

VICE-ADMIRAL SIR ROBERT MANSELL, K.C.V.O., C.B.E., in the Chair.

THE CHAIRMAN, in introducing the Lecturer, said that Captain Creighton had spent the greater part of his career surveying, and navigating H.M. ships, and for the last two years has been Director of Navigation at the Admiralty.

## LECTURE.

WHEN considering the subject of this lecture I found some little difficulty in deciding on what should properly be called "New Aids to Navigation and Pilotage," because although many of the appliances and inventions were not in existence when some of us were navigators, yet these appliances have been in constant use by the younger generation of seamen. I trust, therefore, I may be excused if in places I mention things already familiar to some.

Before going into detail, it is only fair that we should pay a tribute to those scientists who by their exertions and inventions have done so much to simplify the task of the navigator. Foremost among them, the late Lord Kelvin deserves the gratitude of all seamen. His magnetic compass and sounding machine were a tremendous advance on anything that went before, and they are still in the front rank of reliable instruments for navigation. His clear brain saw the mistake of having a heavy magnetic needle, which by its size induced magnetism into the surrounding iron and so caused errors in the compass. By substituting very light magnetic needles, their field was much reduced and a more accurate and reliable compass was the result.

Since that time, however, the ever-present need for quicker and safer transit of shipping has caused inventors to study the needs of navigation, with the result that to-day we have a large number of appliances of all descriptions, some of the greatest possible use, others still in the nature of toys but capable of being improved so as to take their place in navigation and pilotage.

### SEXTANTS.

Deep Sea Navigation has undergone little change. The stars in the heavens are fixed and immutable, and astronomy has done practically all that it can do to assist. One observation of a heavenly body

still gives only one position line, and the intersection of two or more such lines is still the only method of fixing the ship's position apart from wireless bearings. So far as wireless is concerned, there is every indication that Direction Finder bearings by day will only be reliable at comparatively short distances from the transmitting station, and by night they are liable to great inaccuracies. But, as the number of W/T stations is increasing year by year, there is little doubt that in the future a ship will be able to fix her position by D/F bearings in most of the important areas.

Wireless also assists by giving time signals to ships at sea. These eliminate the errors of chronometers on which the accuracy of an observation depends, with the result that the position of the ship is more accurately determined.

The accuracy of sea observations is also being improved by amending the Refraction Tables, if found necessary. Sextants fitted with a prism attachment have been supplied to men-of-war on different stations, and by means of this prism the horizon in front of the observer and behind him are reflected ; half the difference of the two readings gives the true Refraction. It must be said, however, that so far as present experience goes, the Refraction Tables as published have shown themselves to be wonderfully accurate.

An instrument called the Booth Bubble Sextant is also in process of trial and manufacture. This instrument should enable sights to be taken as long as a heavenly body can be seen, although the sea horizon may be obscured. It is obvious that for both ships and aircraft this instrument may become most valuable. It enables star sights to be obtained all through the night and not only at twilight. It was used by airship " R.34," and with great success in 1923 by Cahal and Continho on a flight from Cape Verde Islands to St. Paul Rocks. Forty sights were taken ; for some the bubble level was used instead of the sea horizon, and an excellent landfall at St. Paul Rocks was made.

In connection with sea sights, an instrument called the Brown Artificial Horizon is being tested, and reports are favourable, but it has not yet been adopted. It consists of a mirror mounted on a gyroscope, which keeps in the horizontal plane.

Yet another aid to taking sights is McNeil's All-Weather Sextant. This makes it possible to obtain readings of the altitude of the sun on a cloudy day, when the disc is invisible, by utilising the long wave invisible radiation of the sun—infra red rays—which is more readily transmitted through cloudy atmosphere than the visible radiation. The invisible rays are collected by a mirror, about six inches long, attached to the index arm of the sextant in the position usually occupied by the index

mirror. The mirror concentrates them on a thermo-pile, and the current generated thereby is passed through an amplifier to an ammeter. In theory, the thermo-pile will generate a maximum current when the sextant reading corresponds to the altitude of the sun. This sextant has no horizon glass, but it is intended to be held horizontal by means of indications given by observations of the position relative to a pointer of the mercury level in a small U tube.

## THE GYROSCOPIC COMPASS.

Before the invention of the Gyroscopic Compass the navigator had to depend on his magnetic compass. The magnetic compass, well as it serves its purpose, is an imperfect instrument. However carefully looked after, there is always the haunting fear that unknown deviation may deflect the needle from the magnetic North ; the variation of the Earth's magnetism, which it not always known exactly, has also to be allowed for.

The deviation, caused by the ship herself, may constantly vary, due to the courses steered, the geographical position, or the nature of the cargo carried. In warships, the firing of guns will certainly alter, if only temporarily, the magnetism of the ship and consequently the direction of the compass needle. These unknown errors are often present and, in spite of constant attention, the navigator cannot always absolutely rely on the accuracy of his compass. To such unknown errors can be attributed many of the wrecks around our shores.

The Gyro Compass, as it is generally called, has swept away all these uncertain factors and gives a true and accurate course to steer. Pointing to the true North, it is unaffected by magnetism, and only has small and trivial errors to be allowed for ; these involve corrections for Latitude and for the course and speed of the ship.

The best known gyro compasses are the Anschutz, the Brown, and the Sperry.

*The Principle of the Gyro Compass.*—Every free rotating body when subjected to some other or new turning force, tends to set its axis of rotation parallel to the new axis of rotation by the shortest path, so that the two rotations take place in the same direction. Suppose an ordinary gyroscopic top be suspended and set revolving. Then, if pressure be applied to one end of the axis, the whole apparatus will tend to move in the direction shown by the light arrow ; in other words, the axis always tends to move at right angles to the force applied. This motion is called precession. If the axis is moved parallel to itself no precession takes place.

Now a gyro, if freely suspended and set in motion, would tend to keep its axis in a fixed direction in space, and owing to the earth's

rotation it would describe a complete circle with respect to surrounding terrestrial objects every twenty-four hours, unless its axis happened to be pointing to the Pole, in which case it would remain fixed in direction with regard to such objects. In the case of the Gyro Compass, however, the gyro is not freely suspended, since the centre of gravity being below the metacentre of the moving system, the force of gravity acts on the axis of the gyro and tends to keep it horizontal. This force of gravity acts on the axis of the gyro in the same manner as the pressure of the pencil on the gyroscopic top, and causes the whole system to precess until the axis of the gyro is parallel to the axis of the earth, i.e., until it stands in the true North and South line.

From the foregoing it will be seen that the action of the Earth's rotation provides the directive force in the gyro compass. This directive force is maximum at the Equator and diminishes as the Poles are approached, because the higher the Latitude the smaller the actual distance moved by the gyro (in space) in a given time. At the Poles themselves no direction force exists as there would be no movement (in space).

*Damping of the Gyro.*—If the gyro is started with the North and South Poles on the card some way from the meridian, the Earth's rotation will cause a precession towards the meridian, but unless checked these poles would oscillate to and fro from the meridian for an indefinite time. To counteract this, damping devices are provided in the compasses to damp the swing across the meridian, but even with this check, two hours must elapse after starting before the compass is steadied down.

*The Equipment.*—A complete Gyro Compass for a ship consists of the master compass, the receivers, and the generating plant and switchboards. The master compass is kept in some place where it is under cover and protected, but by means of the receivers a compass which repeats the reading of the master compass, can be installed in any desired position.

## WIRELESS DIRECTION-FINDING BEACONS.

During the last ten years, the application of Directional Wireless methods as aids to marine navigation has become very widespread. Prior to 1920, the methods generally adopted consisted in the use of wireless direction finders at special shore stations erected for the purpose. These stations, on request, supplied bearings to ships, the ship making special transmission for the purpose.

The alternative scheme, which has received the most attention since the above date, consists in placing the radio direction-finding instrument on board the ship itself, so that radio bearings may be taken upon any

transmitting station, the position of which is known to the operator or navigator. The whole object has been to enable the navigator to determine his bearings at any time, without reference to the personnel operating the shore station. With the Direction Finder on board, there is no delay—the bearings required can be obtained at any time and as often as required, and the ship can obtain the bearing of another ship, so that, in the case of an S.O.S., she can locate her with certainty.

## THE ROTATING BEACON.

As an alternative to the use of a Direction Finder on board ship, a Rotating Beacon Transmitter has provided a means of obtaining bearings by wireless without the necessity of any special signalling, between the ship and any shore station. The development of this system of wireless direction finding was begun several years ago by the Air Ministry to avoid the necessity of carrying any special gear in aircraft navigating by wireless.

A Rotating Beacon is established at Orfordness and is in constant use, and one is being erected at Rangoon by the Marconi Company. The Beacon consists of a rotating loop transmitter, having directional properties by which an observer in a ship can obtain his bearing from the beacon without the use of a direction finding equipment. The rotating loop is a closed loop or frame coil about 10 feet square, supplied with current from a suitable radio transmitter. It is mounted on a vertical spindle, about which it can be rotated at a uniform speed. When in operation, the loop acts as the aerial for sending out wireless waves, but it has a characteristic feature that the strength of signal sent out in any direction varies during the rotation. The intensity of the signal heard in the telephones of the wireless receiver also varies, therefore, with time, passing through alternate maximum and minimum values as the loop rotates.

In order to obtain bearings from such a Rotating Beacon, it is necessary to determine the position of the loop at the occurrence of the signal minimum, and this is most easily carried out by a method of timing. The transmitter is arranged so that a characteristic signal is emitted when the line of maximum radiation is in the North direction. If the operator on board ship starts a stop watch at this signal and measures the interval that occurs until the signal passes through its minimum, he can then determine his bearing from the transmitter, if he knows the time of rotation of the transmitter.

The time of rotation of the Orfordness Beacon is sixty seconds, so that the coil moves at the rate of six degrees per second. In any observing position, therefore, the bearing of the transmitter in degrees

is obtained by simply multiplying by six the measured time in seconds from the North signal to the minimum signal.

Since the rotation of the transmitter is symmetrical about its axis, it is evident that two signal minimums are experienced for each revolution of the Beacon. Successive bearing observations may thus be made at half-minute intervals during the operation of the Beacon. This enables a series of line bearings to be observed from which, with a knowledge of the speed and course of the ship, the actual position of the ship may be plotted.

It will be realized, then, that the Rotating Beacon is of great value to aircraft and to ships not fitted with direction-finding apparatus; but practice and experience are necessary to obtain good results, as the minimum signal has to be very accurately timed.

### THE TALKING BEACON.

An interesting invention called the Talking Beacon has been installed at Cumbrae Island in the Clyde. It was invented by Mr. Stevenson, and its advantage is that it ensures that a vessel proceeding up the Clyde picks up the Cumbrae fog signal, no matter how unsatisfactory a departure she has had, say off Holy Island or off Ailsa Craig.

With the establishment at Cumbrae of this Talking Beacon, the signal is picked up on the wireless seven miles off Cumbrae, and the vessel gets the exact *direction* of Cumbrae. She can steer on the Beacon with confidence that she is on the right course for Cumbrae, and with certainty that she will pick up the sound of the horn and will not pass to right or left beyond the range of the horn. This is because she always knows the direction. As soon as she hears the fog horn she will then get her *distance* to the exactness of a cable. This, combined with the direction, gives her an exact position.

In addition to the usual coastal fog signal on Cumbrae, which gives three blasts and two blasts alternately every seventy seconds, a wireless telephone transmitter speaks the name "Cumbrae" and distances up to five miles off in sea miles and cables. The blasts of the fog signal are also heard in the telephone, and a bell is sounded just before each mile is spoken. With this Talking Beacon—

(*a*) the sound of the usual fog signal is heard through the air;

(*b*) the distance of the Beacon from the ship is obtainable with any wireless receiver by means of the wireless and sound signals together;

(*c*) the direction of the Beacon from the ship is obtainable by means of the wireless signal.

The procedure on board is as follows. Smith listens to the fog signal blasts through the air, while Jones listens to a wireless receiver which reproduces the speech from Cumbrae, giving miles and cables. Then Jones observes what is spoken on the wireless receiver at the moment when Smith indicates or signals that he hears the third blast of the fog signal through the air. What Jones hears spoken at that instant is the correct distance of the ship from the Talking Beacon.

The Cumbrae Talking Beacon is arranged so that Smith should signal to Jones at the moment when he hears the end of the third blast of the fog signal. If Smith prefers to signal when he hears the beginning of the third blast, then the correct distance is two cables more than the spoken distance which Jones has heard.

A danger to be guarded against is that sound in fog is so variable both in direction and distance that the mariner, not hearing the fog signal through the air, may be led to assume that he is further off than is actually the case. The direction of sound may vary to almost any extent, as the original sound wave may have echo waves off the fog added to it. Various observers may therefore give different directions as being the direction of emanation. For instance, an observer A. may give the direction in which he began to hear sound, while B. may give the average direction of all the sound heard, and C. may register the direction of the last portion of the sound heard. The correct direction is that of the commencement of the sound as given by A.

JANUS SYSTEM FOR PREVENTION OF COLLISIONS IN FOG.

The Janus System of Continuous Course Signalling is in active operation on the Great Lakes and various waterways in America, and, in time, it may well come to be more generally adopted. The principle of the System is that the course of a ship is indicated by the frequency of a signal equal to one minute plus an interval of time in seconds angularly equivalent to the course to be indicated. According to this formula frequencies of recurrence of the regulation prolonged blasts for various courses will be :—

| | | | M | | S |
|---|---|---|---|---|---|
| N. | 0° | = | 1 | — | 00 |
| N.E. | 45° | = | 1 | + | 7½ |
| E. | 90° | = | 1 | + | 15 |
| S.E. | 135° | = | 1 | + | 22½ |
| S. | 180° | = | 1 | + | 30 |
| S.W. | 225° | = | 1 | + | 37½ |
| W. | 270° | = | 1 | + | 45 |
| N.W. | 315° | = | 1 | + | 52½ |
| N. | 360° | = | 1 | + | 00 |

In actual practice, the navigator does not have to think of frequencies; all he has to do is to set the pointer on the dial of the Janus apparatus in the chart house to the magnetic course he is steering. This apparatus will then automatically control the whistle, and anyone coming within sound of the signal can immediately ascertain his course. This is also done without any calculation or thought of frequencies, and in a purely mechanical manner.

By starting an ordinary stop watch, with a compass rose on its dial, at the end of any blast, then stopping it at the end of the next blast a direct reading of the signalling ship's course can be obtained.

## SOUND SIGNALLING.

The Radio Acoustic Method of Sound Signalling provides a means whereby a ship can fix the relative position of another at sea. One ship drops an explosive charge, and at the same time makes a W/T signal. The second ship notes the W/T signal and the interval before the sound of explosion is heard in her microphone. A direction-finding bearing of the W/T signal and the interval of time will give the bearing and distance, as the time sound takes to travel in water is known. Various lightships are also fitted with a submarine sound signal, which, in conjunction with the W/T signal, will give a ship her bearing and distance.

## ECHO SOUNDING.

In recent years an ingenious and original method of ascertaining the depth of the sea has been evolved. This invention is as great an advance on Lord Kelvin's sounding machine as that instrument was on those preceding it. By Echo Sounding, which is being rapidly installed in seagoing ships, soundings can be taken continuously and as often as required, and instantly recorded either on a dial or on a roll of paper very similar to a barograph record. Thus the undulations of the sea bottom can be graphically shown instantaneously as the ship passes over it. These soundings are as accurate as the hand lead, and surveying vessels now use this method for sounding out shoals and making surveys.

The method is based on the theory of the propagation of sound by waves, and the reflection of these sound waves on striking a different medium. In short, a sound is emitted from a ship, is reflected back from the bottom of the sea, and received back in a hydrophone. The time of this double journey is measured and, the speed of sound in water being known, this interval is connectable into a distance, half of which, after the application of minor corrections for the separation of the transmitter and hydrophone, is the depth of water under the ship.

Sound in water travels at about 4,900 feet per second which, to take an example, means that in 10 fathoms the interval of time to be measured is only one fortieth of a second. As the result of a number of years effort and experiment by the designers, instruments have been designed to measure these extremely short intervals. Briefly described, the Admiralty instrument has for its source of sound a steel diaphragm, fixed to the hull of the ship, and this is set in vibration by a small spring hammer, which is withdrawn at regular intervals from the diaphragm by a solenoid. A simple microphone enclosed in a carefully designed rubber body and compartment forms the receiving hydrophone. A $\frac{1}{8}$ horse power motor, running at 1,800 revolutions per minute, drives two switches through a 10 to 1 reduction gear. These switches consist of brushes bearing on a rotating disc with insulated segments. One of these breaks the circuit to the solenoid of the transmitter three times a second for about 0.0025 second, whilst the other running on the same shaft short circuits the telephone in the receiving circuit, except as determined by the position relative to the corresponding pair of brushes of a second insulating segment. This latter pair of brushes can be displaced by a hand wheel, and if a sound is heard in the telephone, we know that the time taken for the insulated segment of the disc to travel the amount of the displacement must be the same as that taken by the transmitted sound to travel to the bottom and back to the receiver. The velocity of sound in water and the revolution of the switches being known, it is possible to graduate this displacement of the brushes in terms of the depth in fathoms, and this is done on a circular scale on the hand wheel.

It is clear that the speed of the motor is all-important, and a specially designed centrifugal governor controls it to a constancy of 1 per cent., despite variations in the supply voltage.

An instrument of this nature would have been invaluable to a ship like the "Highland Hope," and if used, she would not have been wrecked on the Farilhoes in 1930.

### THE ELECTRIC SOUNDER.

A German invention for sounding consists of a small torpedo-shaped bomb, which is thrown overboard and explodes on striking the bottom. The time interval until the explosion is heard gives the depth. The bomb sinks at the rate of 1 fathom per second.

### TAUT WIRE MEASURING GEAR.

Taut wire measuring gear provides a method of measuring the distance over the ground, by means of a wire which is anchored to the sea bottom and paid out astern of the ship. It was first used in cable

ships to find a fault in the cable, when the distance of the fault from the end of the cable had been found electrically. The gear has also been used for fixing the position of minefields, or buoys and shoals out of sight of land, and for measuring a base in hydrographic surveys.

The drum carries 140 miles of piano wire. The sinker should be dropped about two miles before the point of departure is reached, to prevent any dragging of the wire or sinker. The ship is then " fixed " and the wire allowed to run. The position at the end of a run will, of course, be influenced by any cross current encountered.

### LEADER CABLE GEAR.

Leader Cable Gear, as its name denotes, is a method whereby a ship can be led into harbour in fog or darkness when no marks are visible. It consists of an electric cable, lying on the bottom, through which an alternating current is flowing.

The ship approaching enters the magnetic field surrounding the cable which operates a simple detector on board the ship, by means of which she is enabled to follow the course of the cable.

### PATENT LOGS.

Efforts have been continuous in the search for a good speed and distance recorder, as its value is patent to us all. Several types are available, and among them the well-known Walkers Log[1] still holds its own as an accurate instrument. However, the advantages of a Bottom Log as opposed to a towing log are very real, especially to men-of-war, fishing craft and other types of ship.

Four well-known Bottom Logs can be obtained to-day :—the Forbes ; the Pitometer ; the Sal ; and the Chernikeef. The latter is fitted in the " Bremen " and " Europa," and has given good results. Incidentally, this Log is probably the most suitable for small ships, as it records speeds as low as 1 to 1½ knots with accuracy.

The Pitometer and Sal Logs work on the principle that the speed is calculated from the pressure recorded on a disc. The other Logs have a propeller revolving in a tube, and the speed of revolution of the propeller records the speed of the ship through the water.

### A UNIFORM SYSTEM OF BUOYAGE.

The need for new aids to navigation and pilotage has not escaped the notice of the civilized world, and since 1924 the International Committee under the auspices of the League of Nations have been

[1] One of these logs and, by way of comparison, a mechanical log used in 1803, are to be seen in the Museum.—EDITOR.

considering the possibilities of having a uniform system of buoyage and lighting for all countries. The idea is good, but there are many practical difficulties in the way.

At present there are two main systems in the world: the Cardinal System and the Lateral System. There is no intention of abolishing either one or the other of these two systems, but the idea is that those countries which use the Cardinal System should adopt uniformity in the marking of sea marks, and that those countries which use the Lateral System should adopt uniformity in that system.

*The Cardinal System*, used by the Scandinavian countries, is a method of marking shoals, isolated dangers, etc., by a mark which indicates that the shoal or rock lies in the direction of one of the cardinal points of the compass. This method is suitable in waters where many isolated dangers exist with deep water channels on either side.

*The Lateral System* consists in marking the channel by definite marks, showing the port or starboard side of the fairway to a ship going with the main stream of flood tide, or entering a channel or harbour from the sea.

At present there is not uniformity in this respect, and it is not easy to achieve. Buoys suitable for ice-bound waters may need to be different from those most suitable for tropical waters, etc. The expense of changing from one system to another is, of course, always a present difficulty; however, the idea is being pursued and will, no doubt, achieve practical results in the near future. It undoubtedly would be of great assistance to a navigator proceeding from the port of one country to the port of another to find the harbour, shoals and channels marked in the same way. Good charts and sailing directions of course minimise the necessity, but all the same a uniform system would be a definite aid to pilotage.

The British point of view has always been that, although uniformity may be desirable, its value may be more theoretical than practical; but in any case, if a uniform system is to be adopted, the first essential is that the system adopted should be the "best," and not a system agreed on for uniformity's sake. We contend that certain things are essential for safe pilotage:—

(1) That the shape of a buoy is its chief characteristic, and not its colour. This is obvious, as colour may not be seen, and at best it depends on the frequency of repainting, while the shape cannot alter.

(2) That no red lights should be exhibited on starboard hand marks. This is in conformity with the red light of ships, and is simple to the seaman.

In the Conference held at Lisbon in 1930, difficulty was experienced in seeking agreement on these points. Foreign countries seemed to place more value on the idea of uniformity than on the question of the shape of a buoy or the colour of a light. British opinion considered the latter to be essential requirements, so agreement was not reached, but a further conference is to be held when it is hoped that the value of the practical points made by the British delegates at the last conference may be generally accepted, and a uniform system based on these requirements may be adopted.

In one particular at least, if agreement could be reached, a definite gain would be achieved, and that is in a system of " wreck-marking " that would be universal. A wreck may occur at any time in any place. There may be no time for warning, and it becomes a definite obstacle to a navigator of which he may have no knowledge beforehand. If this wreck were marked on a universal system, the navigator would recognize it at once and know on which side he should pass. The British representatives, at Lisbon, made great efforts to get a universal system of wreck-marking adopted. Success was not achieved, but the value of such a system was fully recognized, and there is little doubt that a universal system of marking wrecks will be adopted in the near future. One objection raised was that to mark a wreck as advocated by Great Britain would necessitate the provision of a large number of buoys of different shapes kept ready at the various ports. It was thought that this would be necessary as a wreck might have to be marked as a starboard hand, port hand or middle ground obstruction. But this was met by the ingenious method of Trinity House for getting over this difficulty. In this method a wreck-marking buoy is constructed, so that the superstructure is interchangeable. A cone, a can or a spherical superstructure is bolted on to the buoy, depending on the manner in which it is desired to mark the wreck.

There is little doubt that in all these matters of buoyage and lighting our authorities are well in advance of other nations. The sound and seamanlike opinions held by our Chairman, the Deputy Master of Trinity House, and most ably put forward by the leader of the British Delegation, Sir John Baldwin, were a most valuable contribution to the Conference at Lisbon, and we hope may result in a uniform system, when adopted, being the best from every point of view.

## CHARTS AND SAILING DIRECTIONS.

Quite as important as any of the " New Aids to Navigation and Pilotage " are the new Charts and Sailing Directions that are constantly being issued by the Hydrographic Department of the Admiralty.

The eight surveying vessels of the Royal Navy are constantly at work, surveying for wrecks, locating shoals, charting unknown seas, and daily adding to the safety of navigation throughout the world. This work of charting the seas, ever going on, quietly and unobtrusively, is one of the greatest contributions that the British Empire has made, and continues to make for the benefit of the world. To give you an idea of the work done by the Hydrographic Department, the following Table of Charts, etc., published during the year 1930, may be of interest :—

*Summary of Charts, Notices to Mariners and Books published by the Hydrographic Department during* 1930 :—

| | |
|---|---|
| New charts for general purposes .. .. .. | 46 |
| New charts and diagrams for special purposes .. | 123 |
| New plans added to the above .. .. .. | 65 |
| New editions of charts published .. .. .. | 75 |
| Large corrections to chart plates .. .. .. | 86 |
| Important corrections to chart plates .. .. | 169 |
| Small corrections to chart plates .. .. .. | 7,503 |
| Corrections to charts inserted by hand .. .. | 298,808 |
| Admiralty Notices to Mariners published .. .. | 2,163 |
| Navigational Warnings issued by Wireless Telegraphy | 752 |

During the year 1930, 38 shoals or rocks, 59 wrecks and 9 obstructions were notified by Admiralty Notices to Mariners as non-existent or as having been removed. The existence and position of 87 wrecks, 18 obstructions and 14 derelicts were also notified; 752 Wireless Navigational Warnings were broadcasted.[1]

## HELM ORDERS.

The gradual adoption by all nations of a standard and uniform method of giving helm orders may be considered as a definite aid to navigation and pilotage. Although opinion in this country has been very divided as to the necessity or advisability of making any change, yet I feel sure in days to come the change will be considered a very definite advance. It was put forward at the International Conference for Safety of Life at Sea held in London three years ago, and although Great Britain did not desire any change, yet we accepted the idea in exchange for other concessions by foreigners in the matter of the load line and so forth.

The passage of the Bill through the Houses of Parliament has been a stormy one, and no definite date for the introduction has yet been

[1] These warnings are issued by the Admiralty to the various Wireless Stations in the British Isles, and are broadcast from these stations.

announced, but it will certainly come into force in the near future. The advantage to pilots should certainly be great, for at present they have to remember what orders are in force for the particular ship they are piloting, and the next ship may be using a different method. It would seem, too, that, in these days, to give orders with reference to a helm or tiller which is not visible and probably does not exist, is definitely antiquated and complicated. By giving orders in the direct sense, the ship's head, wheel and rudder all move in the same direction; surely this must be the simpler and more correct procedure. The difficulty of the change-over period is apt to be exaggerated. Other nations have changed without the slightest difficulty, and what they can do the British seaman can certainly do. It is satisfactory to know, however, that we intend to retain the terms " starboard " and " port " used in their direct sense, and are not going to adopt the orders " right " and " left " as used in American ships.

## METEOROLOGY.

In the days of sailing ships meteorology was the all-important science controlling the strategy of movement, but with the introduction of steam, ships were no longer dependent on the direction and strength of the wind, and interest in the weather naturally became less. But now meteorology has again become recognized as an important aid to navigation. The wind current, and weather atlases of the oceans, prepared in the Meteorological Office and published by the Hydrographer of the Navy, are gradually being revised for the benefit of navigation, and especially for air navigation.

The development of wireless telegraphy has made it possible to collect at central meteorological stations synchronous weather observations covering a wide area, and these are broadcast for the information of other meteorological services, aviation, and shipping, in the form of collective messages. From the data received it is now possible for ships to draw synoptic charts, from which, after experience has been gained, a forecast can be made, thus putting in the hands of the navigator a definite new aid to navigation. The invention of wireless pictures is likely to revolutionize the transmission of synoptic charts. Experiments have shown that it is now possible for a copy of a synoptic chart to be sent out by W/T, and for this chart to be received on board any ships fitted with appropriate receiving apparatus.

Twice a day—at 9 a.m. and 8 p.m.—a special forecast is issued by W/T from the Meteorological Office for the use of shipping in the vicinity of the British Isles. These forecasts are repeated by the B.B.C. at

10.30 a.m. and 9.15 p.m. They consist of a general inference, and a forecast of wind and visibility for different areas of the seas around the British Isles. In addition code numbers are broadcast giving the necessary particulars of weather at twelve coastal stations, so that a rough synoptic chart can be drawn by the recipient. The gale warning system whereby cones are hoisted at numerous places along the coast provides efficient warnings of severe weather to coastal shipping, but fishing craft in the open sea were unable to obtain these warnings until the development of the B.B.C. provided the necessary means. Fishing vessels are now only too glad to buy a wireless receiver, as many thousands of pounds can be saved by hauling in nets in time before the approach of a sudden gale.

In conclusion, I think it will be agreed that the various aids to navigation that I have attempted to describe should do much to lessen the hazards of the seamen's calling. Nevertheless, it must be remembered that the art of navigation is far from an exact science, and is not likely to be so for many years. The sailor has to contend with the forces of nature, which are often unknown, and it is not possible to make exact deductions from any particular occasion.

We know that in a small ship in a gale, she may be continually heading to windward of her course, and yet be carried bodily to leeward by the action of the wind and waves. Similarly a large liner or other heavy ship may make good a course to windward, due to the lesser effect of the same forces acting. We also know that the effect of a hurricane or typhoon may set up a surface drift that may affect dangerously a ship far distant from the disturbance. These factors cannot be allowed for, and the annual toll of life and shipping bear witness to their effects. Much has been done by old navigators in recording the ocean winds and current, and we have the benefit of their observations and experiences. To those old seamen our gratitude is still due, even though the unknown quantities which they had to contend with are being gradually reduced by the scientific aids that we now have at our disposal.

As the advance of steam killed the romance of the sailing ship, so science is gradually taking from the navigator much of the romance of his art. The time is coming when he will no longer have the satisfaction of matching his experience and calculations against the forces of nature, and a "good landfall" may soon become a matter of course, instead of a tribute to his skill. This is inevitable, but with the imperative need for quicker transport and the obligation on Masters to make their destination up to time, any and every improvement in navigational aids will certainly deserve and receive the gratitude of all seamen.

## DISCUSSION.

MR. G. B. STIGANT (Chief Cartographer, Admiralty) suggested that, in view of the vast importance of shipping to this country, more time and money ought to be spent on navigational research.

CAPTAIN B. W. R. HALL, R.N.: What are the projected helm orders exactly?

THE LECTURER: They are that the orders shall be given in the direct sense, as opposed to the indirect sense which we have used up to the present.

CAPTAIN HALL: Is it still "starboard" and "port," or is it "right" and "left"?

THE LECTURER: We shall continue to use the words "starboard" and "port" as we do now, only they will be used in the direct sense instead of in the indirect sense.

COMMANDER R. E. GODFREY, R.N.R.: Might I suggest that possibly a good many of the accidents which occur are not so much owing to the fact that navigational facilities are not available as to the fact that they are not used. It is possible that this is due to their not being sufficiently advertised, but more probably, shall we say, to the conservatism of the sailor. As an example I see from to-day's paper that the Lizard Wireless Station is being closed down owing to it being used so rarely.

There is another thing about which I should like to ask. I have been connected with India for many years. We used to have a very elaborate storm warning service, which was compiled as the result of information collected from ports and shipping in all parts of the Indian Ocean. This information was sent to Simla and, after being carefully tabulated, came to us in the form of a warning telegram, but by the time we received it, it was usually 24 hours late, and the storm had come and passed on. Is it necessary for the procedure to take such a long time; could not warnings be issued more rapidly?

## THE LECTURER:

Commander Godfrey's remarks about the Lizard Wireless Station raise rather an interesting point. It is a very expensive station; it is kept up by the General Post Office, and, in order to save money, ships make use of the Lizard Station in thick weather only—they do not use it in clear weather. The result is that this Station is costing the Government a great deal. The big ships, which are fitted with their own directional-finding apparatus on board, make little use of it, and the Station is, therefore, no longer justified. It is hoped to use the Land's End Station for smaller ships when the Lizard Station is closed down.

With regard to Commander Godfrey's second point about meteorological information, that is being very actively pursued. The Department is trying to get meteorological information all round the world. Commander Garbett of the Meteorological Office is now on his way to South Africa with a view to linking up Indian and African stations with the idea of getting warnings broadcast. At the moment the Government of India are not prepared to incur the expense of publishing daily telegrams. But the point has not been lost sight of, and such a system will undoubtedly be adopted in better times.

## THE HYDROGRAPHER'S REMARKS.

THE SECRETARY: We regret very much the absence of Rear-Admiral H. P. Douglas, who had intended to be present this afternoon, but, unfortunately, he

is on the sick list. He has, however, been good enough to send some remarks which he would have contributed to the discussion, and which I will read :—

" I would first like to thank the lecturer for the generous manner in which he has referred to the Naval Surveying Service and the Hydrographic Department. From his remarks you will gather that the work of the surveyor has been much speeded up by the use of these aids to navigation, some of which I may say are now considered essential to the surveyor ; for example, the Taut Wire Measuring Gear and the Echo Sounder. By the use of such new devices, the output and accuracy of surveying work afloat are very greatly increased, and this must have a repercussion on the work of the Hydrographic Department, so that we shall find ourselves more than ever inundated by new surveys which should replace old charts or be used for new ones.

There is one interesting point I would like to make as regards Echo Sounding, as affecting both the surveyor and the navigator. A case recently occurred where a ship in a fog obtained a sounding by echo of over 20 fathoms, and on referring to his chart, the Captain saw a similar depth charted in his supposed position with shoaler soundings of from 15 to 16 fathoms roundabout ; so, he proceeded with confidence. Almost immediately, however, the ship grounded, and was then found to be some distance from her supposed position and on the edge of a bank which dropped quickly to 15 or 16 fathoms by the chart. The sounding of 20 fathoms was, I considered, so indisputable that an examination of the edge of this bank was made by a surveying ship. She found after a very close survey that there was actually a small depression or hole 24 feet or so deep on the flat sea bottom, where the depths were 15 and 16 fathoms. This had been missed by the old lead and line method, and was only discovered by the echo method which can, of course, give almost a continual record of the depth of water. In fact it may be said that nowadays we can accurately contour the sea bed far more quickly than we can contour the land."

THE CHAIRMAN :

I think we must all be very deeply impressed by these new aids to navigation which the Lecturer has described, all of which have come into being since I first started to go to sea. At the same time, I think we have to realise that there are certain dangers in relying too much on all these mechanical and electrical aids, and that there are still times and occasions when, in the last resort, the navigator has to rely on his old instinct. I think wireless telegraphy especially wants to be dealt with very carefully. You have heard from the Lecturer the different methods now employed—such, for instance, as rotating beacons. You have heard him draw attention to the fact that a rotating beacon goes round the whole circle in one minute. That means that in one second it covers six degrees. A rotating beacon is supposed to be of most use to the small ship which does not possess a direction-finding compass ; but you will realise that the system necessitates a high degree of skill and precision on the part of the observer, who has got to split up a second into six parts in order to get an accurate bearing, and when you remember that a second makes a difference of six degrees, carelessness may lead to an accident. It wants pretty accurate observation and a pretty accurate watch as well—one would not be satisfied with an error of six degrees in a compass.

The Cumbrae Talking Beacon is a very ingenious affair, but the Lecturer has called attention to the fact that it depends on hearing the sound in the air. The unintelligent person who thinks " Well, I am going to hear this sound " and

goes on on that assumption will soon find himself on the rocks. The vagaries of sound are extraordinary. We have carried out many experiments in the Trinity House Service, and we have found that in some cases you can hear a very powerful fog horn twelve miles off; you may then lose it; hear it again five miles off; lose it again; hear it two miles off; and lose it again until you get within three quarters of a mile of it. You cannot depend on it at all. A man who does not know of these peculiarities of sound and of air, and who merely depends on going on until he hears the trumpet, is going to get into trouble.

There is another thing about wireless direction-finding. In a fog, when the stations are round about you, you can be absolutely sure of your position; but you still do not know where other ships are. I think there will very likely be a great inducement to vessels to go as fast as they can, once they find out where they are, and then the number of collisions will be increased; and in navigation more casualties are due to collisions than to grounding. The Liverpool Underwriters' Association recently published their figures for five years in *The Times*, and those figures showed that during that period the average number of strandings per year in which they were interested—and it is a fair comparison—was approximately 1,600 and the average number of collisions was approximately 2,000. There were actually 23 per cent. more collisions than strandings. Therefore, the greatest danger which seamen still have to face appears to me to be collision rather than stranding.

With regard to the helm orders, as Captain Creighton said, the British seaman can do anything which the foreign seaman can do, and as they have carried out these changes without any trouble, I am sure that we can.

The customary votes of thanks to the Lecturer and Chairman were carried by acclamation.

# THE MAINTENANCE OF MECHANIZED FORMATIONS

By Lieut.-Colonel E. R. Macpherson, O.B.E., F.R.G.S., R.A.O.C.

> "For many years mechanization has been invading the normal activities of the nation. The army is the great agent through which the nation applies its normal activities to war purposes; consequently it must make full use of mechanical developments. Indeed it has become evident that the next war will witness a vast display of scientific equipment."

THE above official statement may be taken as representing the considered opinion of our military authorities. On the other hand, in a recent book[1] we find the following view on the same subject: "The second fallacy is the idea that by mechanizing our forces, we can create a powerful force with fewer men. I am persuaded that this is a delusion as profound as the theory that there will be no more war." The author, it should be added, is a keen protagonist of the horse, an outlook which may have somewhat biased his opinion on mechanization.

These are two sharply contrasted points of view. How can they be reconciled, if at all? In order to arrive at some correct estimate of the position, let us then analyse certain factors in the problem.

Modern fighting forces are wholly dependent on all available national resources, both in personnel and in materiel. Accordingly, whatever scientific developments are taking place in the mechanical world will be inevitably reflected in the technique of the military machine. In fact, the armed forces of no Power can afford to lag behind the corresponding stage of progress in civil life, so that, whether we agree or not, we are forced to take serious notice of any scientific development which occurs in our national life, with a view to its possible adaptation to the defence of the country. Consequently, the development of all forms of mechanized transport, which has been taking place in industrial circles

[1] "Fear, and be slain." By the Rt. Hon. J. E. B. Seely, late Secretary of State for War.

thus claims our most serious consideration, while the present official attitude towards mechanization seems more than justified by the present march of progress.

Much has appeared concerning mechanization in the contemporary Service press—in particular one clearly articulated account of R.A.O.C. commitments and procedure with regard to a mechanized formation in the field, which deserves our closest attention.[1] So exhaustive is this study that I now propose to confine myself to the consideration of one important basic problem arising out of maintenance, that is provision, this being the *fons et origo* of the whole question.

## PROVISION.

Mechanization will place many new burdens on the organization for provision at Army Headquarters after a commencement of hostilities.

A careful study of these burdens reveals that they will become even more acute in war. What then will these new burdens be?

They may briefly be summed up as follows:—

(1) Lack of standardization of vehicles and components;

(2) Changes in design which will inevitably take place, when our mechanized forces have been subjected to the acid test of active service;

(3) Difficulties arising from the trade being unable to keep pace with our ever-changing requirements: the same would apply to our Ordnance factories.

Let us analyse the above more closely.

1. Hitherto, in peace, we have not even gauged the immense potentialities of mechanization, owing to the total lack of opportunity. In addition, financial and other cogent reasons have prevented us from experimenting on a scale large enough to determine what types of vehicles we are going to standardize.

Colonel Sir Frederick Pile, in a recent lecture,[2] stated:—"My opinion as to the types of tank of the future is that there will be only two main types; a light tank and a medium tank. . . . As for armoured cars, I think we shall develop a light three-man armoured car, perhaps with the engine in rear . . ." Sir Frederick is admittedly one of our greatest experts on mechanization to-day, and such a statement from him is very welcome, as at present there are no fewer than twenty-nine types of

[1] "The Mechanized Unit in the Field," by Lt.-Col. C. A. H. Montanaro, O.B.E., R.A.O.C., in the Journal of the Royal Artillery, October 1931.

[2] Delivered at the R.U.S.I. on 10th December, 1930. See JOURNAL of the R.U.S.I. for May, 1931.

"A" vehicles[1] and fourteen types of "B" vehicles[2] in the Service. The present large number of types considerably increases our maintenance problems, while it has to be admitted that it will be difficult to standardize until the conditions, under which our A.F.V's would have to operate, have been determined. The effect of this lack of standardization will be reflected in the branch dealing with provision at Army Headquarters at the first call of war.

No officer would—for safety's sake—dare to be generous in his provision so long as he has so wide a range of vehicles to deal with, since any prodigality in one direction might seriously hold up sudden and unexpected urgent demands in another, either by taxing the sources of supply, or by appropriating all available transport.

It must be remembered that practically no reliable data regarding maintenance curves will be available. These will have to be built up gradually on actual experience; unfortunately, this is the only way, so this will be our first burden.

2. It is well known that there is a direct relationship between mileage and consumption of spare parts; what will this consumption be under the stress of war? Our Regulations inform us that: "Mechanical units will always require a certain minimum supply of spares, failing which vehicles will cease to operate in increasing numbers." There is no doubt, too, that as a result of the experience gained in the opening phases of a campaign, considerable modification of design may take place. The second burden will thus be to secure reliable data on which to formulate our figures for reserves, etc.

3. All motor manufacturers are likely to be somewhat jumpy on an outbreak of war; this is only to be expected in view of the precarious position of the motor market, a condition of affairs which is bound to arise on such an occasion. This will tend to curtail a good deal of manufacturing activities. It will thus be a matter for serious consideration how far the Government would be justified in subsidizing certain firms with a view to ensuring that their potential resources are not cut off.

We shall need the whole of the available resources of the trade, apart from Government factories, to enable us to withstand the losses which will be sustained by our mechanized forces in the opening stages of a campaign. Various military writers have assured us that these

[1] "A" Vehicles include all tracked and semi-tracked, armoured cars, A.A. gun lorries and P.E. lorries.

[2] "B" Vehicles include all load and passenger-carrying and tractors other than those driven by R.A.S.C.

initial losses may be as high as 50 per cent. of the forces engaged. This will be our third burden.

Most students of mechanized transport problems now agree on one point, viz., that the whole question must be treated as being highly specialized, and incapable of being bracketed with, or dovetailed into, any other existing organization. In war, we treat ammunition as a specialized subject: similarly we must do the same with the M.T. problem.

There is not the slightest doubt that after an outbreak of war, a Base M.T. Depot will be formed, together with depots on the L. of C., etc., if the latter should be found necessary. In fact, it will be a matter for serious consideration whether the whole M.T. services should not be organized on lines analagous to ammunition.

As the first engagements of mechanized formations are likely to result in losses, which might, at first sight, seem prodigious, it would appear only logical to suggest that whole-vehicle and complete assembly replacements will be the first items required. Some time must elapse before our base workshop is functioning at full efficiency; therefore our light-aid detachments and formation workshops will be most severely tested. The actual number of "A' and "B" vehicles in a possible overseas expeditionary force must at present remain pure guesswork. The fact is no one really knows, as there are so many contributory factors, both political and financial, and many as yet undetermined.

Brigadier Rowan Robinson has inferred that for every twenty-seven A.F. vehicles, twelve other type vehicles are required for maintenance services, a proportion of approximately 2—1. We will assume then that only a mixed tank brigade is actively engaged during the first fourteen days of a campaign, and that it suffers the estimated minimum 50 per cent. losses. Translated into terms of ordnance provision, this means that at least 20 per cent. of A.F.V's will be 100 per cent. loss, i.e. approximately forty-four "A" echelon vehicles will have to be replaced immediately, or the efficiency of our "Petrol Force" must suffer. In addition, 30 per cent., or approximately a further seventy "A" Echelon vehicles, will need emergency repairs and assembly replacements. Possibly 10 per cent. of "B" Echelon, or fourteen vehicles, will also need minor component replacements.

It will be realized, then, what a serious problem will be involved in meeting our commitments during the initial stages of a campaign.

A survey at this juncture, suggests that wide *prevision* will result in adequate *provision*: that is, no mechanized formation should embark for overseas unless at least 25 per cent. of complete "A" Echelon A.F. vehicles are held in reserve for *immediate* issues, and at least 10 per

cent. " B " Echelon vehicles are forthcoming under similar conditions. In addition, assembly unit replacements should be held for 30 per cent. A.F. vehicles and 15 per cent. " B " Echelon vehicles.

Heavy as these figures appear to be, I do not think this is an over-estimate of the probable initial heavy demands; I am convinced that any reduction of the above figures would be disastrous. In short, no mechanized expeditionary force should move overseas without at least two weeks supplies of vehicles and spares, held under R.A.O.C. control, computed on the quantities suggested above.

Assuming that the foregoing would be available at the base, advanced base, field park or workshop, the provision officer would then be able to devote himself to developing the provision plan. In a very few days he would have some data on which to build up his maintenance curves, when at all costs standardization of types must be insisted upon, if this has not already been done.

## CONCLUSIONS.

The essence of sound provision is to ensure that constant sufficient stocks of M.T. parts, assemblies and vehicles will be available in ordnance base depots in war, and this can only be achieved by :—

(i) Standardization of " A " and " B " echelon vehicles;

(ii) Building up of maintenance supply curves and reserves as soon as possible;

(iii) Subsidizing of certain firms in the motor industry;

(iv) Formation of the base M.T. Depot with an adequate provision staff, equipped with the latest labour-saving accounting machines, etc.;

(v) Close liaison between provision and the General Staff regarding projected operations—this connexion may be regarded as of vital importance.

If we specialize, we must also centralize, as the latter is a logical corollary of the former. Centralization has been found necessary in the trade owing to mass production methods; we cannot afford to ignore it. The exigencies of the military machine demand centralization not only in peace, but in war as well. If we do not centralize in peace, we shall reduce our capacity to think in terms sufficiently comprehensive to embrace our greatly expanded activities in war.

# INFANTRY REORGANIZATION

By Major R. F. W. Ashworth.

IT may appear strange to many retired soldiers that advantage should not have been taken during the period of readjustment following the War to place the organization of the infantry upon a more scientific basis in order to facilitate the supply both of battalions to serve abroad and of drafts to "feed" them, and also, at the same time, to furnish a few battalions at home ready for instant service in any sphere where they may be urgently required.

The present system of two-battalion organization dates from 1882, before which year each battalion bore a number and was a self-contained and independent regiment. That method did not furnish an adequate supply of men to enable the ranks of short-service battalions abroad to be kept filled; consequently, as one may now say, it had to be scrapped. But the changes that were made in bringing battalions together evoked bitter feeling. Many of the partners of such forced marriages resented their union and would have nothing to do with each other, and all ranks clung to the old numbers with a devotion quite fanatical. Officers and men of one battalion of a regiment were often, when posted to the linked battalion, made to feel their position keenly; nothing that had been the custom in the one unit could satisfy the more exacting military standard alleged to prevail in the other. To this day upon social occasions many officers describe themselves as belonging to the *n*th, though the number was dead before they were born. Even among the men the spirit of the old numbers survived for many years and is, perhaps, not yet altogether dead.

The linked battalion system, however, was indispensable to the short service system which alone gave, relatively to the peace establishment with the colours, the numbers of trained men in the prime of military age that enabled us to place and keep any large force in the field. *Pace*, therefore, the fierce controversialists of the '80's it may be affirmed that time has shown that in making that reform the authorities were right and the rest of the Army was wrong. It may easily happen that the further experience of nearly fifty years may indicate the necessity for another reform to enable the last ounce of military value to be extracted from the men and money that the State places at the disposal of the military authorities.

At present we have 126 line battalions, divided into 64 regiments, two Irish regiments consisting of but one battalion each. These 126 battalions are stationed as follows:—45 in India; 20 in the Colonies; and 61 at home.

Thus there are fewer battalions at home than abroad, probably a temporary condition that has come as a result of the need to strengthen our garrisons in Egypt and China. Since the linked battalion scheme depends for its working upon a balance between the garrisons at home and abroad it will be realised that, to some extent and at the present moment, it fails. The North Staffordshire Regiment and Highland Light Infantry both have their two battalions abroad, while the Royal Irish Fusiliers (a one-battalion regiment) is in India. These facts need not be unduly stressed, for something may be conceded to temporary emergencies without impairing the case which it is desired to make.

Taking things at their best, however, each regiment should have one battalion at home and one abroad. Now the latter needs about 200 men a year in drafts, and the home battalion generally sends them in two detachments during the winter. The Indian standard is very exacting, calling for men twenty or more years old and of at least one year's service; so that home battalions, left during the winter months with a large number of "men" under twenty, and a good many more over twenty but without a year's service, are in what must be regarded as a parlous condition, and certainly unfit to take an effective part in any sphere of military operations where they might be urgently required. Of course the system contemplates the employment of the Army Reserve to bring home battalions up to war establishment, but there are many occasions when it is inadvisable, for political if not military reasons, to call attention to some measure which may prove to be merely one of precaution. It is even, in the view of the writer, questionable whether the Army Reserve should be employed in the spear head of any expeditionary force. The men come to a great extent from occupations which have not trained them to march $x$ miles with a $y$ load. They all need at least a refresher course in musketry, entrenching, machine gun, etc., and should, if possible, be trained for a month before being put into the field.

It may be argued that our reservists are no worse situated than Continental reservists who take their guns and the road in the same breath, but against this it should be recognized that Continental reservists are to a greater extent drawn from agricultural occupations, and that on the Continent they would not act as they do if they could avoid it. We can adopt a better way because our military system, rightly organized, will enable us, as will be shown, to put into the field

29 battalions, with 5 battalions of Guards, at any moment and in perfect physical fitness, provided the war clouds have taken two or three weeks to gather.

Such a result, however, cannot be attained with two-battalion regiments. It requires four-battalion regiments; and assuming the present numbers abroad to be maintained, the groups and the location of their constituent battalions would be as follows :—

A GROUP—

13 regiments each having
- 2 battalions in India.
- 1 battalion in the Colonies.
- 1 battalion at regimental centre on high establishment.

B GROUP—

11 regiments each having
- 1 battalion in India.
- 2 battalions at home training centres.
- 1 battalion at regimental centre on low establishment.

C GROUP—

7 regiments each having
- 1 battalion in India.
- 1 battalion in the Colonies.
- 1 battalion at home training centre.
- 1 battalion at regimental centre on medium establishment.

The remaining battalion for India would be found by sending the two Irish one-battalion regiments there alternately.

Of the above, one battalion of each regiment would be permanently localised in India and one at the regimental centre, so that the " floating " force of line infantry would consist of 13 battalions in India and 20 in the Colonies.

If, for the sake of example, it may be assumed that these " floating " battalions serve eleven years abroad, that period would be divided into seven years in the Colonies and four years in India. Half of the number would spend the first portion of their foreign service in India and the other half the last.

Groups would not be composed of the same regiments for ever, i.e., there would be a gradual turnover. Thus, the first year after the system was adopted two battalions of a B Group regiment would be sent abroad, one to India and one to the Colonies. This brings the regiment into A Group. The " floating " battalion in India of a regiment of A Group would return home thus bringing it into C Group, while the Colonial battalion of a C Group regiment would return home thus bringing the regiment into B Group. This restores equilibrium. The next year two B Group regiments would similarly send abroad two battalions each, and so on alternately one and two. In that way, on

the average 1½ regiments would change their group yearly so that the periods spent in each group would be :—

| | | |
|---|---|---|
| A Group | .. .. .. | 8—9 years. |
| B „ | .. .. .. | 7—8 „ |
| C „ | .. .. .. | 4—5 „ |

Officers and men would thus obtain the diversity of experience that has so often been beyond price and which has made them the most adaptable soldiers in the world.

It will have been noticed that it is proposed to keep one battalion of each regiment permanently in India. At present a system prevails which, in decent military restraint, one can only describe as extraordinary; that is a battalion spends seventeen to nineteen years abroad and is then brought home. What happens when, as is generally the case, it is leaving India upon relief by its sister battalion, is that the homegoers are ordered to transfer perhaps 600 men to the battalion coming out, so that since the battalion may have been depleted of time-expired men early in the season, perhaps but 240 remain to go home as the battalion. Not only that, but the writer has known cases in which those 240 have not been the men of longest service abroad but have been taken up and down the service list. This, evidently, was to ease the task of the War Office in finding drafts in subsequent years. It is, however, a farce to call such a movement the return of a battalion to England. Only recently a Colonial paper announced that a battalion had returned home after nineteen years and that but three men who accompanied it when it went abroad had remained with it the whole time. Such reliefs are unduly expensive in taking some men home before they have served a full period abroad while they result, in each case, in two battalions being ineffective military units for some time after the re-shuffle.

An amusing case came to the writer's notice. It was his duty to visit a battalion about to leave India in order to close and audit its clothing accounts. He reached the spot about a week before the date of departure, and found that nobody then knew which men were to be included among the 600 for transfer to the battalion coming out. It was suggested that the Commanding Officer was waiting until all the available pay had been spent because he feared that otherwise those to remain in India might, under the influence of bibulous emotion, smash up the barracks in disappointment, while those to go might also join in the sport out of high spirits.

Under the present proposals the battalions permanently located in India would change their personnel gradually by annual drafts to replace time-expired men and also officers and men who had qualified for transfer to the home establishment by virtue of six years in India. On the other

hand, battalions stationed in India temporarily, and next moving home, would be allowed to extend the service of a good number of men during the last two years abroad so as to reduce the number to be sent out as much as possible during that period. Then, when it came to their departure, they would send to the sister battalions in India the normal drafts required that year and, otherwise, go home intact.

The arrangement of having two battalions of a regiment, in the case of thirteen groups, in India may be expected to commend itself strongly to the authorities in that country, because by placing in each case one battalion at a Field Army station and one at an " obligatory " station they would, in the case of at any rate thirteen battalions, have an ample reinforcement strength already in the country. This would avoid the painful experience of seeing battalions employed on a frontier expedition dwindle because of the inadequacy of local reinforcements. This is the more important now that the establishment of battalions in India has been reduced considerably below the old figure of 1,020 warrant officers and other ranks.

The proposed system gives scope to skill in administrative working. For instance, a battalion leaving home for the Colonies should be composed in part of men having at least four years to serve, and in part of such as had at least seven years to serve. Thus drafts would be needed only in the years when they were changing Colonial stations. A battalion leaving home for India should, if possible, be composed in part of men having four years to serve and the balance of men due to serve various longer periods. Similarly, a battalion leaving India for the Colonies would not take men who had less than three[1] years to serve and should permit of short extensions of service to enable it, so far as possible, to take its own men. The future programme of movements, being also disclosed to all concerned, would enable judgment to be used in posting recruits from regimental centre battalions to home battalions and so avoid much re-shuffling " when the troopers were on the tide." Thus, a regiment in B Group, knowing that a year ahead it was to send a battalion to India and one to the Colonies, would post the older recruits to the former. In turn, that battalion would at once send to the localised Indian battalion, men whose service would be too far advanced when the time came for its own departure, though normal Indian requirements would probably have pretty well cleaned it out without special searching. Also, before the time for embarkation training centre battalions would return to the regimental centre battalion men of too much service to accompany their battalions abroad. Things being well managed, the

[1] Three, if the stay at the rest station was to be three years or four if it was to be longer.

two battalions for abroad would stand ready some months before their departure.

It will have been gathered that it is proposed that the regimental centre battalions should have establishments varying with the tasks devolving upon them according to their groups. Centre battalions in Group A should also not take recruits of less than 18½ years of age. On the other hand centre battalions in Group B should be raised to the highest establishment a year before coming in for a group change.

The centre battalions would enable the depots to be abolished, their personnel being used to augment service battalions. This would effect economy in "overhead" charges which throughout the Army are extravagant.

Another point is with reference to the existing twenty years of age and one year's service rule as qualifying for India. This rule is ancient, dating from the days when enteric fever took terrible toll of boys from home. It used to be said that a regiment could reckon upon losing a hundred men through enteric in its first year of Indian service, youth being well known to aggravate susceptibility. Enteric has long since given way before pure water and sanitation, and it would seem that to lessen the difficulty of finding drafts for India the figures might be 19½ and 9 months, respectively, in cases in which the receiving battalions were located (in whole, not part) in the hills in summer. One would put the age even lower but for such as overstate their ages on enlistment.

While the foregoing scheme may commend itself on theoretical grounds, the real obstacles await any proposals that may even be suggested for carrying them into effect. In regard to these, the attached scheme may illustrate some tentative solution rather than arbitrarily settle any details. There are many relevant considerations, such as the adequacy of the recruiting reservoirs of different regiments, that can be known only to the War Office. In any case, in the terrible North the Highland regiments will await the onslaught with their traditional repugnance to change of any sort, one which is exceeded only by their passionate disapproval of formal amalgamation with any other Highland regiments. For this reason, which may prove too hard even for the War Office, it will be seen that it is tentatively proposed not to amalgamate Highland regiments but to associate them together in pairs for relief purposes without, of course, inter-postings.

It may be asked why, if amalgamation can be waived in the case of the Highland regiments, it cannot be done as regards the others. The reply is that to do so would destroy the great feature of the scheme in providing such an excellent instantly ready force as the twenty-nine

battalions at home training centres. That scheme would, in any case, be impaired by the exemption of the Highland regiments, and the writer hopes earnestly that they could be brought into line. The ordinary Englishman does not understand the intricacies of clans, but he may perhaps be permitted to suggest that these have to a large extent been obliterated by the kindly hand of time, and that, on territorial grounds, there seems no reason why, for instance, the Black Watch should not be amalgamated with the Argyll and Sutherland Highlanders. What the case may now be the present writer does not know, but Highland regiments have not always been "the clean potato." He himself has known some who held commissions in a Highland regiment though they were pure Cockney.

Particular attention is drawn to the suggested restoration of a system of numbering regiments. In many cases they would get back their old numbers though it is not possible for those low in seniority to do so. The reintroduction of numbers would be of great value in the field where a bold figure can be seen so much more easily than a long title across the arm. It is also shorter in writing orders, and is, above all, something that the mentality of a man can grip.

Another advantage of the proposed change is that it would equalize promotion amongst officers and avoid the necessity that at present sometimes occurs of transferring them from one regiment to another. How one has sometimes shuddered at some of the transfers that have been gazetted. Either the original posting or the transfer must have violated the territorial system. Generally speaking, transfer cannot fail to violate all that a man acquires in his first regiment. It leaves him in a state when his reactions to regimental sentiment are purely artificial, and when he is without a certain moral driving power that might otherwise be brought to bear for the good of the Service, though he may even be unconscious of this himself. The evil of transfers has gone so far that one cavalry regiment known to the writer could be regarded as a perfect mosaic of other regiments so that the second-in-command used to comment bitterly that he was the only one of the older members who had really given allegiance to the regiment.

In reply to such as may talk, with reference to the proposed changes, of destroying esprit-de-corps, it may be urged that an organization affording the opportunity of greater military efficiency is of infinitely greater efficacy than one which relies, as Caesar said, upon the remembrance of former valour. The Army has lately shown a certain decadence in failing to look facts in the face. The Army List is cluttered with memorials to dead regiments whose deeds already, and more fitly, adorn history. There is, it must be confessed, a weak spirit abroad

which fears change lest unjustifiable susceptibility be aroused. If that had existed long ago we should still have had regiments such as The Sherwood Foresters Bow-and-Arrow Rangers. As it is, we have over a long period had Grenadiers to whom, fortunately, the facts of war have restored the correctness of an ancient nomenclature. The Fusiliers have no such chance. Titles, however, matter but little. What counts is the organization. Officers and men having maintained the splendid spirit which makes British regiments different from all others, what may they not achieve when they are organized in such a way that enthusiasm may obtain the best results?

It matters little that the territorial system as a whole must go if the proposed scheme is adopted. It has ever been a sham which was overlaid at birth by the inequalities of distribution of population in an industrial country and, since, by the decrease of the agricultural population. How, in any case, could a regiment representing two counties have a county spirit? How many counties have no regiment at all, their men being submerged in others? How often has it been necessary to push recruits from anywhere into regiments that happened to need them? How much has the connexion of officers with counties been considered? Have even Highland regiments been self-contained?

So far as the Territorial Force is concerned, it would be necessary to affiliate its battalions to the nearest regimental centre and to reconstitute the Territorial Associations as Centre Associations to administer the battalions so affiliated.

Let us, in short, not look overmuch to the past but rather prepare for the future.

## APPENDIX.

### SUGGESTED RE-GROUPING OF REGIMENTS.

| *New Regtl. Number.* | *Constituent units.* | *Possible new titles.* |
|---|---|---|
| 1 | Royal Scots<br>(?) Scottish Rifles | 1st Royal Scots Rifles. |
| 2 | Queen's<br>E. Surrey | 2nd Queen's Royal Regiment. |
| 3 | Buffs<br>W. Kent | 3rd Queen's Own Buffs. |
| 4 | R. Lancaster<br>Lanc. Fusiliers | 4th R. Lancaster Fusiliers. |
| 5 | North'd Fusiliers<br>Durham L.I. | 5th North British Fusiliers. |
| 6 | R. Warwick<br>Northampton | 6th Regiment. |
| 7 | Royal Fusiliers<br>Middlesex | 7th London Fusiliers. |

## APPENDIX.

### Suggested Re-Grouping of Regiments.

| *New Regtl. Number.* | *Constituent units.* | *Possible new titles.* |
|---|---|---|
| 8 | Liverpool<br>Loyal N. Lancs | 8th Liverpool Regiment. |
| 9 | Norfolk<br>Lincoln | 9th Regiment. |
| 10 | Somerset<br>Dorset | 10th Regiment. |
| 11 | Devon<br>D.C.L.I. | 11th Regiment. |
| 12 | Suffolk<br>Essex | 12th Regiment. |
| 13 | Yorks L.I.<br>York & Lanc | 13th Regiment. |
| 14 | W. Yorks<br>E. Yorks | 14th Regiment. |
| 15 | Sussex<br>Hampshire | 15th Regiment. |
| 16 | Beds. & Herts<br>Ox. & Bucks | 16th Regiment. |
| 17 | Leicester<br>Notts & Derby | 17th Regiment. |
| 18 | E. Lancs<br>S. Lancs | 18th Regiment. |
| 19 | Green Howards<br>W. Riding | 19th Green Howards. |
| 20 | K.R.R.C.<br>Manchester | 20th King's Royal Rifles. |
| 21 | Scots Fusiliers<br>H.L.I. | 21st Highland Fusiliers. |

[1] Perhaps the constituent battalions should be exchanged with the 10th.

| | | |
|---|---|---|
| 22 | Cheshire<br>Shropshire | 22nd Light Infantry. |
| 23 | Welch Fusiliers<br>Welch Regiment | 23rd Welch Fusiliers. |
| 24 | S. Wales Borderers<br>Rifle Brigade | 24th Rifle Brigade. |
| 25 | K.O.S.B.<br>Border Regt. | 25th Border Regiment. |
| 26 | N. Stafford<br>S. Stafford | 26th Staffordshire Regiment. |
| 27 | Berkshire<br>Wiltshire | 27th Regiment. |
| 28 | Gloucester<br>Worcester | 28th Regiment. |

*Allied for Relief purposes only.*

| | |
|---|---|
| 29 | Ulster Rifles |
| 30 | Black Watch |
| 31 | Seaforth Hrs. |
| 32 | Gordon Hrs. |
| 33 | Cameron Hrs. |
| 34 | Argyle & S. Hrs. |

# THE BRITISH NAVY IN SOUTH AFRICA

By W. L. SPEIGHT.

THE connexion of the British Navy with South Africa dates almost as far back as the occupation of the Cape by the Dutch East India Company, but it was not until 1836 that Simonstown was chosen as the headquarters of a Rear-Admiral. At that time the Cape of Good Hope Station was already one of the five foreign service stations mentioned separately in the Navy List. To-day, it has expanded into the African Station, and is a Vice-Admiral's command.

Simonstown was first used as a port in 1742, when it was known as Yselstein. Five years earlier, eight Dutch East Indiamen and two hundred lives had been lost during a storm in Table Bay, and Yselstein was chosen as a nook where ships could take in water and provisions. In 1772 it is recorded that this port contained a magazine, a hospital and a large house which was used occasionally by the Governor of the Colony. In the town there was a slaughter-house, a bakehouse, forges and other facilities of that sort.

Le Vaillant, who visited Simonstown in 1781, said that the position of Naval Commander there was "small, but his place is very profitable to himself by the commerce he has with foreign vessels, buying the merchandise, which he sends to Cape Town, where it sometimes sells at treble its value. When the ships of the Company are at anchor commerce likewise draws a number of persons from the Cape, who furnish lodgings for the officers. Then the Bay is very lively, but on the fleet's departure the place is deserted by all but the garrison."

Commissioner-General Sluysken, in 1793, made the first attempt to fortify Simonstown. This was largely the outcome of the accurate survey French officers had made of the Cape fortifications between 1781 and 1784, when they had troops there. Two small forts, named Zoutman and Boetselaar, were completed in March, 1794. They were built mainly by convict and slave labour, and as the cost of maintaining a slave never reached the sum of £5 per annum, these forts were put up very cheaply.

At this time the authorities were expecting serious trouble from overseas, and accordingly took steps to meet it. In May, 1794, they stationed a garrison of 130 at Simonstown, and homeward-bound ships,

as they arrived, were sent on there from Table Bay to wait until they could sail away in company. Early in 1795, sixteen ships, with cargoes valued at £835,000, gathered at Simonstown, and in May of that year sailed together under convoy of the brig-of-war "Comet" and the frigate "Scipio," which had waited six months for them. But the convoy had hardly got out of False Bay before it scattered, and eight of the vessels were captured by enemy cruisers lying in wait near St. Helena.

In 1797 Lady Anne Barnard visited Simonstown and wrote that she found the place better looking than she had expected; "but there is sadly little room for the poor sick fellows, the honest tars, multitudes of whom have been lost for want of air and wholesome accommodation, they having been so closely packed in their hospital with scurvy, ulcers, etc., that it was certain death going into it. Of late the physician to the Navy (Dr. Pattison) has got, with much difficulty, leave to have use of a stable for horses belonging to some of the officers residing here, and since then sixty men have been put into it, and many of them have recovered." What a contrast this is with the naval hospital at the present time. The latter is high up in the mountains, beautifully situated among gardens, and with the most wonderful views over False Bay to Somerset Strand, with the purple and blue mountains rising up behind these seaside resorts. An overhead cable, along which aerial cars can travel, connects it with the dockyard.

In October of that same year a mutiny occurred among the men of the ships in harbour. It was noticed that sailors in the "Vindictive" were discontented, and five days later the crews of the "Trusty," "Tremendous," "Rattlesnake," "Imperieuse," "Brave," "Star," "Euphrosyne," "Suffolk" and "Chichester" mutinied. The signal was a jacket hung at the end of the jibboom, and as it was hoisted by each ship loud cheers rang out. Admiral Pringle was kept under close watch aboard the "Tremendous," but was allowed to send open letters to the other ships. Commissioned and warrant officers who gave trouble were sent ashore. Fair discipline was maintained by the mutineers. All they sought was redress of grievances, and their appointed delegates presented a manifesto in which it was stated that they remained loyal to their country and would resume duty immediately if an enemy appeared. All they desired was better and more food, and improved treatment from the officers they had sent ashore. The Admiral was not disposed to take strong measures, and when Lord Macartney, the Governor, proposed to occupy the mountains around Simonstown with a large body of troops, he dissuaded him from any such action. Pringle promised to do all he could to redress wrongs and to have officers guilty

of ill-treatment brought before a court-martial. In ten days the men had resumed duty in the ordinary way, whereupon the Admiral issued a special proclamation of general pardon.

After the final cession of the Cape, General Craig decided to use Simonstown exclusively as his naval station. The advantages of the port for this purpose were undoubted, and the authorities have never since had cause to be dissatisfied with this selection. The first move was made in 1811, when the naval dockyard in Cape Town was closed and the stores, staff and some of the works were moved to the new base. Many famous ships and many historic figures were thus brought into Simonstown. Nelson was a midshipman when he visited the port, and sixty-four years after his death at Trafalgar, his first command—the brig " Badger "—was condemned and broken up there.

As the use of steam increased, Simonstown was used less as a port of call for merchantmen, and the Admiralty gradually took over the harbour for purposes of defence. The culmination of this movement was the action of the Cape Parliament in passing, during 1895, an Act that invested the Admiralty with complete control of the harbour and works. In 1899 the British Parliament passed its Naval Works Act, under the provisions of which the new dockyard, basin, breakwaters and forts were constructed. The cost of these works was £2,500,000. The dock then in use was known as the " West Yard." It was considered too small and too badly equipped to serve as an efficient base in so important a strategic point as the Cape. There was no modern dry dock suitable for large warships, nor was there suitable accommodation for them to be refuelled or restored. The new dock had to be built about a mile South of the old one. The town had grown so much since the old dock was built that no ground was available in the vicinity; but a site was reclaimed from the sea, while stone and materials were obtained from the adjacent mountain, which is still disfigured at this spot. At the time, this 770-foot Selborne dock was regarded as being big enough to accommodate the largest warship that was ever likely to be seen afloat, but when the " Hood " visited the Cape in 1924 it was observed that she was 90 feet longer than the dock.

The old cemetery and Admiralty House are the two strongest reminders that Simonstown has a rich history. In the cemetery are the graves of numerous sailors, and their tombstones suggest scores of interesting romances and stirring adventures. Here lie men who were killed in the port towards the end of the XVIIth century, men who fought pirates and took part in great naval battles; here, too, are memorials to those who went down in the ill-fated " Birkenhead " or who were slain in battle on the high seas.

Admiralty House is an old Dutch building that has long been the residence of the Naval Commander-in-Chief. The house, with its excellent drives and well-wooded garden, is little changed from what it was when purchased. Even then it was a mature building, and its actual origin and much of its history is not known. The lawn in front of the house is believed to be the largest in the Cape Peninsula; it is uncertain when it was laid down, but from historical references it is known to have existed in the early sixties, and it has always been an important social centre. Here, during his visit, Prince Alfred gave one of his grand balls; on this and similar occasions a special wooden building was erected.

The house commands a splendid view of Simon's Bay, while below it are the docks; two huge arms of masonry stretching into the sea, with a cluster of workshops, oil tanks, offices and storehouses.

Fifty or sixty years ago it was usual for the fleet to leave Simonstown soon after Christmas, call at St. Helena and Ascension, and then cross over to the African coast, where visits were paid to the ports of all the British possessions as far North as Sierra Leone; by the time the fleet had worked down the coast to Simonstown again it would be well into April. The cruise up the East coast extended as far North as Zanzibar, and usually took place during the winter or spring months. A similar programme is still carried out by the vessels of the Africa Squadron.

Elephant Bay, on the West coast, was a spot visited regularly by the fleet. It was once the custom for crews to camp ashore for a couple of days, and during this time lime was obtained from the neighbouring kiln of a Portuguese settler and the names of the ships written on the sides of the hills with whitewashed stones. Some of these letters were twenty yards wide, and could be read well out to sea. As rain often did not fall for long periods, these mementoes of visiting ships often remained on the hills for years.

In 1897, Cape Colony offered to present the British Navy with a sum of money equivalent to the cost of a first-class battleship—then about £900,000. This offer was subsequently withdrawn, and in 1898 the Cape House passed their Cape Navy Contributory Act, under which £30,000 was contributed annually towards the upkeep of the Navy. At this time Natal was providing, free of all expense, an annual contribution of 12,000 tons of coal. In 1902 the Cape Government increased its contribution to £50,000, and Natal ceased to give coal and contributed £35,000 a year. Great Britain had to pay the remaining £193,000 required to maintain the Cape Cruiser Squadron.

South Africa is now trying to build up a Navy of its own, but up to the time of Union in 1910 Cape Colony and Natal, the two colonies

with an extensive seaboard, were not sufficiently prosperous to purchase and maintain fighting units to protect the long coastline. The South African Naval Service of to-day consists of three minesweepers, used principally for survey work, a duty which was once the province of the Royal Navy. Early in the third decade of the XIXth century the little British frigates stationed at the Cape began the necessary work of charting the coast, and the Navy has never actually suspended it. Simonstown has its hydrographer's office, where much essential draughting and other clerical work is done before data are sent to the Admiralty Office in Whitehall for engraving.

Rear-Admiral Cradock's flagship at the battle of Coronel, H.M.S. "Good Hope," was originally destined to be called the "Africa," but her name was changed before she was launched as a sign of appreciation of the Cape's contribution towards Navy costs. The "Natal," built in 1904, was so named for the same reason, but, unlike the "Good Hope," she was never in South African waters. The "Good Hope" conveyed Mr. Joseph Chamberlain to South Africa in 1902 for a series of conferences on post-war settlement. One or two other vessels added to the Navy List during the last few years have also been given names with a South African flavour.

To-day the Africa Station includes the sloops "Daffodil" and "Delphinium," which are specially designed for service on the West Coast, where in pre-war days the gunboats "Dwarf" and "Thistle" used to cruise. These sloops have been painted white, with yellow masts and funnels, as being cooler than the standard man-o'-war grey. Altogether there are four sloops and two light cruisers belonging to the Station.

The British Navy has seen very little active service off the South African coast. Admiral Elphinstone supported General Baird when he took the Cape, and in the various native wars the frigates stationed at Simonstown have been ready to render assistance where necessary. Naval brigades were employed on shore service during the South African war, and in the late War the actions of South African troops in South-West Africa and East Africa were in every case ably supported by British men-of-war. It remains to be seen whether the days of the Royal Navy in South African waters are numbered, but the new South African Naval Service will have to advance at a much quicker rate than it has done so far before this can come about.

# THE PROBLEM OF THE LIGHT AUTOMATIC GUN

By Captain G. M. Gamble, The Sherwood Foresters.

THE organization of light automatic guns with rifle platoons has, of late, been the subject of much discussion. Some support their reduction in numbers or total abolition on the grounds that they are unnecessary, liable to affect adversely the mobility of the rifle company, and that their inclusion reduces the number of "bayonets" available for the ultimate assault. Others argue that the fire power of L.A. guns is an invaluable asset to attacking or defending troops, and that they must, therefore, be retained as an integral part of the platoon organization. Some even go so far as to suggest that the bayonet is an obsolete (or obsolescent) weapon and that it should be discarded.

It is not proposed to discuss this last contention, but, accepting the necessity that we must retain *some* men armed with bayonets in order to arrive at the objective in attack or counter-attack, we shall attempt to disprove the case for the abolition or reduction of L.A. guns and to suggest a means whereby the difficulties under which they labour, as organized at present, would be greatly simplified, and whereby five extra "bayonets" per platoon would be rendered available.

The necessity for the retention of L.A. guns may be said to depend, to some extent, upon the standard of musketry training of the men. Given four sections of riflemen all extremely highly trained, the need for inclusion in the platoon of one or more L.A. guns is admittedly reduced; the fire of these experts being, to all intents and purposes, as effective as that produced by the guns. But where, except possibly at a School of Musketry, can sections of so high a standard of training be found? Not, it is considered, in the average platoon.

In the attack, fire provided to cover the advance of other sections when given by riflemen will rarely, if ever, be of so effective a nature as that provided by a L.A. section of an equivalent standard of training, the latter presenting a smaller and less conspicuous target than the former.

In the defence the L.A.'s are essentially suited for providing the detail of the fire plan when the general framework of artillery and machine-

gun fire has been formulated. Further, they are particularly effective in engaging surprise and fleeting targets with a maximum of fire effect in the minimum of time.

It has been urged that, in view of the great increase in the number of machine guns in a modern battalion, their retention is no longer justified. It is considered that those who support this argument are losing sight of the correct role of the lighter weapon as compared with that of the machine gun. For example, let us consider the question of "smoke." This will in future wars probably be used to a much greater extent than hitherto, and it appears likely that machine guns will be more frequently blinded and so forced to fire more and more on "fixed lines." The amount of support that they can give to the attacking or defending riflemen will, therefore, be greatly reduced. L.A. sections, on the other hand, owing to their mobility are less likely to be blanketed by smoke clouds and can move with greater ease to avoid them without affecting adversely the general plan of the action. In short it is not considered that the increase in the number of machine guns can, of itself, justify the reduction or extinction of the L.A. guns, nor that a good case can be presented for the assumption that they are unnecessary.

Next we will consider the effect of the presence of L.A. guns upon the mobility of the rifle company. It is agreed that, in so far as one half of the platoon is frequently immobilized in order to help the other half to advance, the mobility of the company, as a whole, is impaired when organized as at present. Further, the type of gun at present in use is an unwieldy weapon which handicaps the movements of men carrying it into action. However, it is anticipated that in the near future this disadvantage will be discounted to a great extent by the provision of smaller and lighter guns. Another essential feature of these guns should be their capability of firing at a slow rate. This would greatly increase mobility, as the carrying of large quantities of ammunition greatly handicaps the movements of men of the rifle companies and, provided the target is hit, nothing is gained by putting three bullets where one would suffice.

Turning to the third argument against the light automatic, that of the resultant paucity of "bayonet men" for the final assault, there is little to be said for the present organization. It is woefully obvious that when the majority, if not all, of the L.A. sections of the attacking platoons are carrying out their proper role, namely, that of giving covering fire, and when oddments caused by casualties, provision of platoon commander's orderly, etc., have been subtracted, there are far too few "storm troops" left to rush the position with the bayonet.

The problem before us is, therefore, to provide the L.A. fire considered necessary and, at the same time, sufficient *men* to capture a position: in other words, how can we produce the fire of two L.A.'s per platoon without immobilizing half the platoon in order to do so?

The solution suggested is to organize the platoon into three rifle sections and one "two-gun" L.A. section of one N.C.O. and eight men.

In offensive operations three rifle sections are thus released to carry out the task of advancing towards and capturing their objective by assault, whilst one N.C.O. and one section with two L.A. guns is left to cover their advance by fire. In most cases both guns will be best employed by firing from one locality, and the section commander will be able easily to control and direct their fire to the best advantage. On occasions when it appears to the platoon commander that the control of the two guns is more than can be satisfactorily coped with by one N.C.O., he should leave his platoon sergeant to act in the capacity of general director of the section's action and to take command of one gun-team in the event of their having to be separated for the purpose of giving one another supporting fire.

In the defence it will frequently be undesirable for the two guns to be placed in close proximity to one another, and folds in the ground, trees, etc., will often make central control of the two gun teams well nigh impossible. In these cases it is suggested that the senior soldier should act as the gun team or sub-section commander for so long as separate action is necessary. This is, undoubtedly, a disadvantage of the organization, but the improvement in the offensive potentialities of the platoon would appear to justify this degree of loss of control in the defence.

So far we have economized in men to operate the guns, but may well be charged with having ignored the supply of their ammunition and their local protection. It is suggested that every man in the platoon should carry, as a part of his normal equipment, a holder or clip suitable for quick adjustment to the guns, containing about 30 rounds of S.A.A. These would be available within the platoon as an immediate reserve for the guns in addition to the 1,000 odd rounds which would be taken into action by the eight men of the double section and might, under certain conditions, be dumped with the guns to be used by them before firing their own ammunition. They could be used, in emergency, by the rifle men, and in this way would supplant the rather clumsy bandolier as used in the past.

Local protection on the outer flanks would be provided by the numbers 3 of the gun teams, the two numbers 4 acting as the supply

link for ammunition. The guns, acting in pairs, would automatically each protect one flank of the other.

As a result of the above only one N.C.O. and four men have been " combed out " of the L.A. sections, but this goes a long way towards providing a third rifle section. The mobility of the company has been improved, the extravagant use of men to operate the guns has been restricted, and the number of " bayonets " has been increased by five, or 36 per cent., of their original strength.

One might discuss at length the effect that this organization would have upon platoon tactics, and many objections to the suggestions could, doubtless, be put forward, but it is contended that the tactical handling of a platoon would be no more difficult than it is to-day and that the " movement " obtained would be much more in harmony with the amount of " fire " provided than is the case at present.

# THE SINGLE-SEATER FIGHTER TACTICAL UNIT FOR HOME DEFENCE

By Squadron Leader J. O. Andrews, D.S.O., M.C., *p.s.a.*

FROM the glorious uncertainties of Home Defence operations emerge two, perhaps the only two, incontrovertible facts. One is that our single-seater fighters will have the most important task that fighters can be called upon to perform. The second is that they will be very limited in number. It is thus imperative to use them economically and to devise the most efficient fighting tactics. The tactical unit, i.e. the number of aircraft working in the closest co-operation, controlled by one leader and subordinating their actions to his throughout all the phases of the combat, is the basis upon which fighter tactics are built. Unless this basis is the most suitable one for the particular circumstances, inefficient tactics and uneconomical use of the fighters must follow.

Home Defence operations, so far as day fighting is concerned, constitute but a small part of our practical experience of air fighting. By far the greater part of our knowledge of day fighting was obtained in France during 1914-18, and this experience, particularly that of the later period of the War which is freshest in our memory, influences fundamentally our present views on the single-seater fighter tactical unit. The conditions prevailing in France and their resultant effects will, therefore, be reviewed to determine how far that experience is applicable to Home Defence to-day.

During 1914 and 1915, when no fighter squadrons existed, the single-seaters—then called scouts—were distributed singly or in pairs throughout the squadrons of the expeditionary force. The armament was a fixed Lewis gun mounted at an angle to the fuselage so as to clear the airscrew disc. Accurate shooting was by no means easy, and tactics were limited to close range individual attack from astern, in isolated encounters.

In early 1916, single-seater fighter squadrons began to appear. Although the pusher fighter and the invention of " deflectors " enabling guns to be fired through the airscrew disc removed the previous restriction on the practicable direction of attack, and facilitated co-operation by

fighter pilots, it remained the normal practice for fighters to operate singly; this was primarily due to the fact that so few were available. During the summer of 1916, as the number of squadrons increased and as the establishment of the squadron was raised from twelve to eighteen aircraft, fighters operated in pairs or in formations composed of a number of pairs. British fighters—mostly D.H.2's and Nieuports—were, at this period, markedly superior to the German aircraft, both in performance and fighting qualities, so that we were almost invariably the attackers. In these circumstances two fighters proved an excellent tactical unit, possessing high manœuvrability and great flexibility. The second aircraft could take station on either flank and be above or below the leader according to the dictates of the moment. The rapid changes of situation arising in air fighting could be easily met, whilst simultaneous attack of an enemy aircraft was possible because the risk of collision was not so great as unduly to hamper manœuvre. As the simplest and safest form of formation flying, it absorbed little energy and imposed the minimum strain upon both the leader and the second pilot. The maximum attention could therefore be given to locating enemy aircraft and to securing a tactical advantage when contact was made. During action, maintenance of cohesion and operation as a tactical unit presented no insuperable difficulties.

If, then, the "pair" was so practical and effective, why did it not survive as the standard fighter tactical unit? The explanation lies in the radical change which occurred in single-seater fighting during the autumn of 1916. The pendulum began to swing, and our fighters no longer enjoyed their previous predominance in performance. Faster and more manœuvrable enemy fighters with good climb appeared, and with them, the morale of the German pilots improved; hence our fighters had, all too frequently, to exchange the happy position of being the hounds for the less enviable one of the hare. Another effect of the increasing offensive power of the enemy fighters was that our artillery, reconnaissance and bombing aircraft suffered ever-growing interference. In consequence it became necessary for our fighters to push further over the enemy's country as escorts to bomb raids or reconnaissances, or as offensive patrols, in the endeavour to shift the bulk of the air fighting from the zones occupied by the corps aircraft. The loss of superior performance combined with the necessity for longer flights over hostile country resulted in rearguard actions, often of long duration owing to the prevailing westerly winds. A prolonged rearguard action by fighters being a most difficult operation, likely to end in disaster, it became essential to find the best *defensive* tactical unit, and to build up formations upon that basis. The best that could be devised was the well known close triangle, which remains the unit to-day. In this unit

the tail of the leader is protected by the two flank aircraft who afford each other protection unless simultaneously attacked; in such event the leader, by a climbing turn, can secure the "height advantage" and relieve the pressure on the rear aircraft. The supersession of the tactical unit of two aircraft by that of three aircraft arose, therefore, solely from the particular circumstances of air fighting in France from the autumn of 1916 onwards, and was dictated by defensive considerations. It necessitates much more attention being paid to station keeping, even should circumstances permit of a comparatively open formation. In practice, only the leader of the unit, i.e. one pilot in three, is able to carry out efficiently the fundamentally important duty of locating enemy aircraft and, when contact with an enemy formation has been made, the tactical unit of three aircraft has serious drawbacks.

The proper principle for single-seater fighters is to close the enemy aircraft and shorten the range until the enemy is destroyed. But three fighters cannot simultaneously and closely engage the same aircraft in an enemy formation; the available air space is too small, the risk of collision too great, and in real warfare co-ordination is too difficult. There are two practical courses of action: each fighter may select a separate target, when close co-operation ceases and the tactical unit becomes in effect reduced to one fighter; alternatively, a pair of fighters may combine, leaving the third to hold a watching brief or to operate independently against another target. In offence, therefore, the tactical unit of three breaks down in practice and produces at best a tactical unit of two. The increase in the defensive power of the tactical unit has been achieved at the expense of efficiency and economy in offence.

The tactical function of the single-seater fighter is essentially offensive. Unless circumstances render it imperative, no defensive bias should be allowed to reduce the offensive power of the tactical unit. In Home Defence air fighting, the conditions will differ fundamentally from those in France during 1917 and 1918 and, in the attack of enemy bomber formations, our fighters can act wholly upon the offensive. In the unlikely event of fighters being used to escort enemy bomber formations, our fighters, being over their own country, are not faced with the necessity of fighting rear guard actions. Since defensive considerations do not arise, the basis for Home Defence fighting tactics should be the most efficient and economical *offensive* tactical unit, i.e., the pair.

A reversion to the pair does more than merely improve the practical fighting efficiency of the tactical unit in Home Defence. It will at the same time increase the flexibility of the single-seater fighter formation and bring about a welcome simplification in fighter tactics, by the removal of a non-essential complication, which is a source of confusion and causes the loss of valuable time in attack.

# THE INTERNATIONAL SITUATION

## THE DISARMAMENT CONFERENCE

AS reported in the last number of the JOURNAL, the Disarmament Conference opened at Geneva on 2nd February. Since that date the various Powers have tabled their proposals. Certain of these proposals have found support from some of the Powers, but the only concrete measure for the limitation of armaments which has, so far, met with general agreement, is that for the abolition of gas and chemical warfare ; but this is hardly an advance, because on every occasion when armaments have been discussed, it has been either formally or tacitly agreed to abolish these forms of warfare.

Meanwhile the position appears to be very much the same as it was six years ago when a full-dress Conference was held at Geneva to discuss the subject of international disarmament, in that, while Great Britain continues to attempt to induce the other Powers—both by example and precept—to reduce their armaments, France adheres rigidly to her claim that any general measure of reduction so far as she is concerned must be preceded by absolute guarantees for security. Her latest proposal to this end is that the League should have at its command an armed force, contributed by the various Powers, and always ready to take forcible measures against an aggressor. Germany maintains that she has, under the Treaty of Versailles, been forced to disarm to an extent which now leaves her practically defenceless, and that her late enemies have not kept faith with the clause in the Treaty whereby they too were to reduce their armaments. The United States, while generally supporting Great Britain, has made certain definite proposals in regard to the reduction of offensive weapons, but these have, so far, only resulted in a reversion to technical discussions as to what are offensive and what are defensive weapons. Japan, but lately embroiled in extensive hostilities and faced with very serious difficulties which could compel her again to resort to arms, is in no position to contribute much to the present endeavours to limit international armaments.

The following are summaries of the proposals of the various Powers.

### FRANCE

M. Tardieu, on 5th February, was the first of the representatives to make known to the Conference the proposals of his Government. While expressing his desire to make a " positive contribution " it cannot be said that he made any suggestions for the actual reduction of armaments. He advocated :—

(1) The internationalisation of civil aviation. Subjects of signatory States would be allowed to construct non-military machines of a tonnage below a figure to be agreed upon ; machines of heavier tonnage would be confined to Continental, inter-Continental, and inter-Colonial organizations under the auspices of the League of Nations. Only the League should have the right to dispose of heavy bombing machines. In case of " flagrant aggression," a State that was the victim of an aerial bombardment should have the right, upon the sole condition that the League is notified, to use all its air forces, even those earmarked to be at the disposal of the League.

(2) Batteries of long-range artillery, vessels carrying 8-inch guns or of 10,000 tons, and submarines of more than an agreed tonnage should be at the disposal of the League.

(3) An international police force should be created to prevent war, and if necessary in case of aggression, to provide a first contingent of effective troops to come to the aid of the attacked State. This force should be at the disposal of the League which should organize its command.

(4) With these measures there should be an acceptance of compulsory arbitration and " aggression " should be defined.

These proposals appear to have acted as a considerable set-back to the Conference at the beginning of its deliberations, and have found little support except in the Government section of the French Press. Nevertheless, they are not illogical from the French point of view of what constitutes effective security, but it seems improbable that it can be seriously anticipated that other Powers, particularly Britain and the United States, will subscribe to the idea of a League Force of heavy artillery, battleships, submarines and bombing aircraft.

### GREAT BRITAIN

The proposals of the British Government are as follows :—

(1) The Government accepts as the basis of future discussion the Draft Disarmament Convention.

(2) It accepts, in general, the method of limitation by reference to the establishment of a Permanent Disarmament Commission.

(3) It supports the establishment of a Permanent Disarmament Commission.

(4) It urges the abolition of submarines, and of gas and chemical warfare.

(5) The abolition of conscription being a very controversial subject, it urges the limitation of effectives by the most practicable course.

(6) It is ready to co-operate in every method of agreed reduction in the size of warships and maximum gun calibre, and will agree to prohibit land guns above a certain calibre.

(7) It wishes special attention to be paid to such prohibition or limitation of arms as would weaken the power of attack and so remove temptation for aggression.

(8) It is ready to study the French plan with every care, and in general will support any changes which will really contribute to a reduction in armaments ; and, as regards naval armaments it believes that the Conference will find it well to accept the work of the Washington and London agreements, building upon them and framing the general convention upon their continued operation.

### UNITED STATES OF AMERICA

The United States Government advocates :—

(1) Consideration of the Draft Convention as containing the outline of a convenient basis for discussions, the United States at the same time being willing to give full consideration to any supplementary proposals " calculated to advance the ends we all seek."

(2) Prolongation of the Washington and London Naval Agreements, the London Agreement to be completed by the adherence of France and Italy.

(3) Proportional reductions from the figures laid down in these two Naval Agreements on naval tonnage " as soon as all parties to the Washington Agreement have entered this framework."

(4) Total abolition of submarines.

(5) Protection of civilian population against aerial bombing.

(6) Total abolition of " lethal gases and bacteriological warfare."

(7) The computation of the numbers of the armed forces on the basis of the effectives necessary for the maintenance of internal order, *plus* some suitable contingent for defence. The former are obviously impossible of reduction ; the latter is a question of relativity.

(8) Special restrictions for tanks and heavy mobile guns—for those arms " of a peculiarly offensive character."

(9) The United States is prepared to consider a limitation of expenditure on material as a complementary method to direct limitation, feeling that it may prove useful to prevent a qualitative race if and when quantitative limitation has been made effective.

Mr. Gibson added that they believed the Conference should and could successfully devote itself to the abolition of those weapons which are devoted primarily to aggressive war.

### JAPAN

The Japanese Government is in favour of :—

(1) Acceptance of the draft disarmament convention as the basis of discussion.

(2) Limitation in the use of submarines by adherence of other States to the London Declaration. On this subject, Japan thinks that " wanton use of the submarine," which is inhuman, is not inherent in its nature. Surface craft can be just as inhuman.

(3) Reduction in the size of battleships and calibre of guns.

(4) Reduction in the tonnage of carriers, and the total abolition of aircraft landing decks.

(5) Abolition of " aerial bombardment," and the use of poison gas and bacteria.

(6) A fair and equitable limitation and reduction of armaments compatible with national safety.

### ITALY

The guiding principle of the Government's policy is equality of rights between all States, and the equalisation of armaments at the lowest possible level. Its concrete proposals may be summarised under the following seven heads :—

(1) The simultaneous abolition of capital ships and submarines.

(2) The abolition of aircraft carriers.

(3) The abolition of heavy artillery of all kinds.

(4) The abolition of tanks of all kinds.

(5) The abolition of bombing aircraft.

(6) The abolition of all kinds of aggressive means of chemical and bacteriological warfare; and

(7) The revision of the laws of war so as to ensure a more complete and effective protection of civilian populations.

GERMANY

The German proposals were prefaced by a preamble explaining that the Draft Convention was rejected because it followed principles of disarmament which diverged from those of the Peace Treaties (for instance it left Powers in possession of offensive weapons). The main points were :—

(1) Voluntary recruitment of armies, or, if this were impracticable, trained reserves to be included in any scheme of limitation.

(2) Abolition of tanks and limitation of calibre of all guns outside fortified areas to 3 ins., and inside fortified areas to 6 ins. Abolition of all forts that might by their proximity be a menace to a neighbouring country.

(3) Reduction of maximum size of warships to 10,000 tons, and of their gun calibre to 11 ins. The highest tonnage of individual ships to be reduced collaterally with the total fleet tonnage. Naval disarmament to proceed under three categories, vessels over 6,000 tons, cruisers over 800 tons, and destroyers not exceeding 800 tons. All submarines to be abolished. All coast defences which " command natural waterways " to be abolished, so that " all nations may have free and unimpeded passage."

(4) Abolition of military aviation and aerial bombing. Civil aviation to be regulated by restrictions such as those imposed on Germany.

(5) Prohibition of gas and bacterial warfare, and of all traffic in arms. Public control of factories producing armaments.

The German Government proposed that disarmament should proceed under international control, and be the same for all.

SOVIET UNION

The Soviet Government desires total disarmament, being convinced that this is the only infallible remedy. Failing this, it will gladly consider proposals for reduction, and proposes :—

> Abolition of all aggressive weapons, including tanks, heavy guns, vessels of over 10,000 tons, aircraft-carriers, military airships and bombing aeroplanes; also the prohibition of chemical and bacteriological warfare.

It also recommends "the progressive proportional method as the most impartial and equitable move for the reduction of armaments, allowing for facilities and exceptions in favour of weaker countries in danger of aggression."

Discussions then centre round these proposals, the various delegates expressing the views of their Governments towards the suggestions of other Powers.

On 16th March, the General Committee of the Disarmament Conference decided to adjourn until 11th April. M. Tardieu expressed regret that the work of the Conference had not proceeded more rapidly, and in particular that the practice had grown up of referring every question back and forth between the General and Technical Committees.

When the Conference resumed its sitting, Mr. Hugh Gibson, the principal delegate of the United States, made further proposals with the object of securing that defence should regain superiority over aggression. This included the scrapping of all tanks and mobile guns exceeding 6-inch and the abolition of the use of gas in warfare. Sir John Simon, on behalf of the British Government, expressed satisfaction that the Conference had had placed before it a definite and practical proposal. M. Tardieu said that the French proposals went further than those of Mr. Gibson, and they found it difficult to study the American proposals by themselves as France had always laid stress on the inter-dependence of armaments. He proposed that as the Committee was at present only concerned with procedure the American suggestions should be referred to the Bureau and dealt with later in conjunction with all qualitative proposals. Signor Grandi, while admitting the difficulty of distinguishing clearly between offensive and defensive armaments generally supported the United States suggestion.

The question of the abolition of tanks and heavy mobile guns has been referred back, like so many other matters, to a Technical Committee, to report upon what are offensive and defensive arms. It is more than probable that there will be a marked divergence of opinion on this as on most other technical matters.

On 20th April, Mr. Ramsay Macdonald flew to Paris and proceeded from there by train to Geneva, where he subsequently engaged in important conversations with the principal delegates. It seems evident that the British Prime Minister has been making very great efforts to

prevent what threatened to be a complete deadlock, if not collapse, of the Conference.

Up to the present, the whole trend of events at Geneva seems only to emphasize more and more the truth of what was written in this section of the JOURNAL in August, 1927 :—

> " The development of these Conferences would seem to point to the wisdom of reverting to ' self-determination ' for nations in the matter of armaments . . . for, so far, the efforts to effect limitations by round-table discussions appear only to have accentuated differences in outlook and defensive needs and to have enhanced the sense of mistrust, which is the natural aftermath of a great war. A general sense of security may lead to a reduction of armaments, but that sense is not being promoted by a full display and intensive comparisons of national weapons and aspirations."

Even such measure of success as could be claimed for the London Naval Treaty seems to be threatened by the present Conference, for Great Britain has felt compelled to let it be known that unless France and Italy see their way to coming into this naval agreement, which at present mainly concerns only three of the five Powers, it may be necessary for her to take advantage of the " escalator " clause. By this clause we can claim the right to increase our Navy if the building programmes of Powers not within the Treaty seem to threaten our sea security.

## THE FIGHTING AT SHANGHAI

IN the February number of the JOURNAL an account was given of the manner in which the Sino-Japanese dispute had slowly culminated in actual warlike operations at Shanghai on the night of 28th/29th January.

It is as well to bear in mind that the development of that situation was of gradual growth, and that both sides were becoming more embittered and more insistent both in their demands and in their opposition. There was, consequently, little scope for any regular plan of campaign as such ; yet the Japanese found themselves involved in an adventure for which they were really ill-prepared in a strictly military sense. They seem, in addition, to have resorted to force of arms without having reckoned on the quality of the resistance which they would encounter during the first three weeks of February. Having underestimated the numerical strength and combatant value of their enemies, they were caught entirely at a disadvantage as soon as the Chinese began to show fight in the very difficult district which extends from the International Settlement at

> Abolition of all aggressive weapons, including tanks, heavy guns, vessels of over 10,000 tons, aircraft-carriers, military airships and bombing aeroplanes; also the prohibition of chemical and bacteriological warfare.

It also recommends "the progressive proportional method as the most impartial and equitable move for the reduction of armaments, allowing for facilities and exceptions in favour of weaker countries in danger of aggression."

Discussions then centre round these proposals, the various delegates expressing the views of their Governments towards the suggestions of other Powers.

On 16th March, the General Committee of the Disarmament Conference decided to adjourn until 11th April. M. Tardieu expressed regret that the work of the Conference had not proceeded more rapidly, and in particular that the practice had grown up of referring every question back and forth between the General and Technical Committees.

When the Conference resumed its sitting, Mr. Hugh Gibson, the principal delegate of the United States, made further proposals with the object of securing that defence should regain superiority over aggression. This included the scrapping of all tanks and mobile guns exceeding 6-inch and the abolition of the use of gas in warfare. Sir John Simon, on behalf of the British Government, expressed satisfaction that the Conference had had placed before it a definite and practical proposal. M. Tardieu said that the French proposals went further than those of Mr. Gibson, and they found it difficult to study the American proposals by themselves as France had always laid stress on the inter-dependence of armaments. He proposed that as the Committee was at present only concerned with procedure the American suggestions should be referred to the Bureau and dealt with later in conjunction with all qualitative proposals. Signor Grandi, while admitting the difficulty of distinguishing clearly between offensive and defensive armaments generally supported the United States suggestion.

The question of the abolition of tanks and heavy mobile guns has been referred back, like so many other matters, to a Technical Committee, to report upon what are offensive and defensive arms. It is more than probable that there will be a marked divergence of opinion on this as on most other technical matters.

On 20th April, Mr. Ramsay Macdonald flew to Paris and proceeded from there by train to Geneva, where he subsequently engaged in important conversations with the principal delegates. It seems evident that the British Prime Minister has been making very great efforts to

prevent what threatened to be a complete deadlock, if not collapse, of the Conference.

Up to the present, the whole trend of events at Geneva seems only to emphasize more and more the truth of what was written in this section of the JOURNAL in August, 1927 :—

> " The development of these Conferences would seem to point to the wisdom of reverting to ' self-determination ' for nations in the matter of armaments . . . for, so far, the efforts to effect limitations by round-table discussions appear only to have accentuated differences in outlook and defensive needs and to have enhanced the sense of mistrust, which is the natural aftermath of a great war. A general sense of security may lead to a reduction of armaments, but that sense is not being promoted by a full display and intensive comparisons of national weapons and aspirations."

Even such measure of success as could be claimed for the London Naval Treaty seems to be threatened by the present Conference, for Great Britain has felt compelled to let it be known that unless France and Italy see their way to coming into this naval agreement, which at present mainly concerns only three of the five Powers, it may be necessary for her to take advantage of the " escalator " clause. By this clause we can claim the right to increase our Navy if the building programmes of Powers not within the Treaty seem to threaten our sea security.

## THE FIGHTING AT SHANGHAI

IN the February number of the JOURNAL an account was given of the manner in which the Sino-Japanese dispute had slowly culminated in actual warlike operations at Shanghai on the night of 28th/29th January.

It is as well to bear in mind that the development of that situation was of gradual growth, and that both sides were becoming more embittered and more insistent both in their demands and in their opposition. There was, consequently, little scope for any regular plan of campaign as such ; yet the Japanese found themselves involved in an adventure for which they were really ill-prepared in a strictly military sense. They seem, in addition, to have resorted to force of arms without having reckoned on the quality of the resistance which they would encounter during the first three weeks of February. Having underestimated the numerical strength and combatant value of their enemies, they were caught entirely at a disadvantage as soon as the Chinese began to show fight in the very difficult district which extends from the International Settlement at

Shanghai northwards as far as the Yangtse River. Indeed, it is not too much to assert that they were so far surprised by these circumstances that they found themselves compelled to deploy a far greater degree of force than was originally contemplated.

The actual fighting may accordingly be divided into three periods :

(*a*) The original attempt to take possession, by means of naval landing parties and aircraft, of Chapei, the native city of Shanghai, lying to the North and immediately adjacent to the International Settlement ;

(*b*) The reinforcement of the original naval landing parties and aircraft which had attempted to carry out the above named task, followed by renewed attacks on the Chinese in Chapei ;

(*c*) The further reinforcement of the combined Japanese forces North of Shanghai, and the conduct of a serious military operation to drive the Chinese troops clear and some miles back from Shanghai proper.

The operations took place over very difficult terrain ; perfectly flat, with only poor cover, and broken up by wet ditches with few practicable passages for infantry—very bad ground for armoured cars or tanks, of which the Japanese subsequently brought a certain number into action without apparently much success. The native city of Chapei consists of a tangle of tortuous streets and is admirably adapted for street fighting from the defender's point of view, although from its nature it is much exposed to all the risks of fire.

The beginning of the affair on 28th/29th January followed the arrival of the Japanese landing parties to reinforce that part of the northern perimeter of the International Settlement which was assigned to the Japanese forces as their sector of defence. Whether the firing began from the Japanese or Chinese side is not quite clear : but the Japanese action and the manner of its execution may be regarded as ill-judged and certain to provoke Chinese resentment ; on the other hand, the Japanese claim, that the first shots were fired by Chinese gunmen from within the Settlement itself. In any case, blood having been spilt, the Japanese invaded Chapei and were soon engaged in street fighting, while their aeroplanes bombed the town freely. The invaders suffered some casualties, officially reported at about 100. The attack had clearly failed and the next two days were spent in desultory sniping. An unsatisfactory truce was then declared by the Japanese to be at an end on 2nd February.

On the next morning some Japanese destroyers steaming up the Whangpo River to Shanghai were fired upon by the Woosung Fort, which guards its entrance from the Yangtse. An action ensued. On 5th February, after a prolonged bombardment from ships and aircraft,

the Japanese naval force developed a heavy attack on Chapei. This engagement proved inconclusive, and there was no alternative to awaiting reinforcements from Japan. These arrived on 7th February in the shape of a small naval contingent of 600 rifles, and the 24th Brigade, made up of mixed troops. These forces then attempted to storm Woosung village and fort, being supported by ships' fire from the river. The fighting continued for one week, without the Japanese making much progress ; in fact a week later they withdrew to the South of the Woosung Creek, which they had succeeded in crossing. It would appear, however, that the Japanese in their desire to avoid casualties depended largely on the naval guns and aeroplanes.

So far things had been going none too well with them, and further reinforcements were welcomed on 14th February. These consisted of the 9th Division, commanded by Major-General Uyeda. This division was barely 10,000 strong, and assembled in part at the Japanese quays in the Settlement.

An attempt was now made by the British Minister in China to patch up some agreement which would obviate further fighting. But the Japanese demand that all Chinese troops should withdraw to a clear 20 kilometres (12 miles) from the Chapei zone was rejected by the Chinese and a further clash became inevitable.

It should be mentioned that the Chinese troops in and around Shanghai consisted of the Cantonese 19th Route Army, commanded by Cheng Ming-shu, and composed of the 60th, 61st and 78th Divisions, together with the 87th and 88th Divisions of Kiangsu troops stiffened by Cantonese cadres. In addition, there were armed police and numerous "gunmen." The position of the Cantonese at Shanghai was curious, and was rendered still more strange by the fact that several Divisions—of Nanking troops—who were not far from the Shanghai fighting do not appear to have joined in the battle. Indeed the Cantonese troops, who had entered the area as the result of the understanding arrived at in 1931 between Nanking and Shanghai, were not regarded with much favour by the Nanking Armies. The situation lends weight to the Japanese contention that they were really fighting the 19th Army and not China nor the Nanking Government.

The renewed Japanese attack was resumed on 20th February. The 9th Division started from a front on the Shanghai-Woosung road, well to the North of the Settlement. The 24th Brigade, still on the Woosung Creek, moved southwards to join in the attack. The naval forces were kept in reserve. Little fighting took place until Kiangwan racecourse was reached when a stubborn resistance was encountered. Finally, the entire Division found itself engaged to the northwards of Kiangwan,

with the 24th Brigade still to the North on its right and the naval forces occupying Hongkew.

The fighting dragged on for some days without much change, the Japanese relying at first on land and naval artillery. It was not until 27th Febuary that Kiangwan was in Japanese hands. They then held a line stretching northwards from Hongkew, still held by the naval contingent, for some seven or eight miles ; the bulk of their forces well to their right. Detachments of the 24th Brigade still held the Woosung Creek, while the Woosung Fort had been steadily bombarded throughout the week by ships and aeroplanes ; the forts at Szetelin, situated a few miles up the river from Woosung, were also bombarded.

The Commander-in-Chief of the British Fleet, Admiral Sir Howard Kelly, then made an attempt to arrange a truce between the two parties, but this proved ineffectual.

The Chinese would not reduce their terms from the following :—

(i) Immediate evacuation of troops by both sides ;

(ii) The Japanese to retire into the Settlement, while the Chinese withdrew to a distance to be fixed ;

(iii) All evacuated ground to be policed by Chinese ;

(iv) Guarantee by the Powers of both sides against attack ;

(v) No destruction of the Woosung Forts.

These terms the Japanese refused to consider.

Meanwhile on 1st March the 11th Division arrived from Japan and was disembarked on the Yangtse some miles to the N.W. of Woosung. Although this Division was less than 9,000 strong, and had probably not been brought up to war establishments, this movement completely turned the Chinese position, and their resistance, which had already been weakening, began to crumble rapidly. On 2nd March, the Chinese started to withdraw westwards, and the Japanese seem to have occupied their late positions without much effort. By the afternoon of the following day the Chinese forces were more than twelve miles back from Shanghai. The Japanese had already occupied the Woosung Fort and village without difficulty, and then moved on until they faced South West, holding the line Liubo (on the Yangtse)–Katingyuen–Naziang–the International Settlement.

The Chinese withdrawal is credibly ascribed to lack of munitions, inadequacy of reinforcements to replace some 6,000 casualties, internal jealousy and intrigues, and general falling off of enthusiasm. The Cantonese had entirely fought unaided by the Nanking troops. The 19th Army finally retired to Quinsan, thirty miles West of Shanghai,

where it remained with a line of outposts facing those of the Japanese. Further reinforcements in the shape of the 14th Division then arrived from Japan and were landed at Woosung. This step enabled them to occupy their line with two Divisions, holding one in reserve in the Settlement, while one brigade remained at Woosung.

In the meantime, the Japanese, now more sure of the situation, replied to the Chinese proposals for an armistice, made on board H.M.S. " Kent," with a counter-programme which ran as follows :—

(1) Cessation of hostilities ; details to be arranged on the ground ;

(2) Conference between China and Japan, with representatives of Foreign Powers, to arrange for the withdrawal of troops and protection of foreign interests in Shanghai ;

(3) Japanese troops to withdraw into the Shanghai Settlement and Woosung ;

(4) Either party to be at liberty to take any appropriate action in case of any infringement of the armistice.

A period of protracted negotiations ensued which was accompanied by no events of any military importance. Both sides held their positions without any movement. On 21st March the 11th Division was re-embarked and returned to Japan ; the 24th Brigade followed. This reduction was not so great as appears, since the 11th Division was on a peace establishment, while the 9th and 11th Divisions remain at approximately their war establishment. On the other hand, five cruisers, two aircraft-carriers and sixteen destroyers were recalled to Japanese waters. The Japanese naval strength at Shanghai remains at three cruisers, one aircraft-carrier and twelve destroyers.

On 4th May, after tedious and protracted negotiations, an armistice was signed. Japan undertook to withdraw her forces to the lines of the International Settlement, while the Chinese army was to remain in the positions occupied at that date.

## THE LEAGUE OF NATIONS AND THE SINO-JAPANESE CONFLICT

THE efforts of the League of Nations to avert hostilities between China and Japan up to the outbreak of fighting at Shanghai were outlined in the February number of the JOURNAL.

On 12th February the Chinese delegate presented an appeal to the Secretary-General of the League, dealing with the Japanese action at

Shanghai, the Japanese raising objections to the Chinese statement. A committee of jurists, however, decided that the appeal was in order.

On 17th February the League addressed an appeal to the Japanese government, both Chinese and Japanese delegates being absent from the preliminary discussion. It declared that it did not appear right that any political or territorial change should take place in the status or possessions of any member of the League.

Two days later the League emphasized the appeal and asked that the expiry of the Japanese ultimatum should not lead to renewed hostilities.

On 21st February the Japanese representative stated at Geneva that Japan had no desire to withdraw from the League, repudiate the Kellogg Pact, permanently occupy Chinese territory, annex Manchuria, or attack the Soviet Union.

On 24th February the Japanese reply to the League appeal was received. It came under seven headings, the gist of the argument being that Japan considered China to be the aggressor; the appeal made no contribution to the ultimate solution of the Shanghai problem; China had no right to claim the protection of the League; Japan was on the defensive; she entertained no political or territorial ambitions in China; she held to her obligations under the Nine-Power Treaty; lastly, it was asserted that China was not an "organized people" within the terms of the Covenant.

On 27th February Sir John Simon was informed at Geneva that Japan, as soon as the 19th Chinese Army had retired to a safe distance, would attempt to arrive at a definite solution of the Shanghai question in conjunction with the Great Powers.

On 29th February the Council of the League met. In view of the negotiations then in progress in H.M.S. "Kent," the Council outlined the plan for a Conference touching the status of Shanghai. The announcement of Sir John Simon that the United States would co-operate in such a conference made a great impression.

On 1st March Japan announced her agreement with the Council's proposal.

On 3rd March the Assembly met, and the next day, following on the receipt of news that Japan had ordered a cessation of hostilities, a resolution was passed that :—

(*a*) Both China and Japan should take steps to render the cessation of hostilities effective;

(*b*) The Powers, having special interests at Shanghai, should inform the Assembly as to the enforcement of these steps;

(*c*) Negotiations should be commenced by China and Japan, with the assistance of the Powers, with a view to a termination of all hostilities.

On 7th March Sir John Simon made an important pronouncement in which he declared :—

> " By the terms of Article 10 of the Covenant all Members of the League have undertaken to respect and preserve as against external aggression the territorial integrity and existing political independence of all Members of the League. These propositions, therefore, are propositions which every Member of the League is bound to accept without regard to the merit of the controversy. Changes brought about not as the result of methods of conciliation and peaceful adjustment but by means contrary to the Covenant of the League of Nations or the Pact of Paris manifestly could not receive the approval of an Assembly of Nations which exists for the very purpose of observing these obligations and upholding these principles."

On 8th March the action to be taken by the League was discussed and on 11th the Assembly accepted the British resolution, the main points of which were as follows :—

> The first part recapitulated the steps already taken by the League ; the second affirmed the principles by which the League was actuated ; while the third defined the powers of the Committee appointed to supervise the steps to be taken. This Committee is to exercise its functions under the supervision of the Assembly, and report as soon as possible on the cessation of hostilities the arrangement for rendering the cessation definitive and for the withdrawal of the Japanese forces ; it is also to watch over the execution of the Council's resolutions of the 30th September and 10th December regarding Manchuria, and prepare the draft of an agreement to be submitted to the Assembly for facilitating the settlement of the dispute ; it is empowered, if necessary, to propose that the Assembly should ask the Permanent Court of International Justice for an advisory opinion, and if the dispute is not settled, to prepare a report containing a statement of the facts and recommendations in accordance with paragraph 4 of Article XV ; finally it is authorised to propose any urgent measure which might appear necessary, and it is to submit a first report to the Assembly as soon as possible before 1st May, 1932. The Assembly will remain nominally in session.

Since then, the further discussions that have taken place at Geneva have been of little interest.

## SHAIKH AHMED OF BARZAN AND THE IRAQI GOVERNMENT

By LIEUTENANT H. M. CURTEIS, M.C., Highland Light Infantry.

EARLY in April it was announced in the House of Commons that a strong punitive force of the Iraqi Army, supported by R.A.F. units, had commenced operations against Shaikh Ahmed of Barzan, whose territory lies in the mountainous region North-East of Mosul adjoining the Turkish frontier. The necessity for such operations, it was stated, had been forced upon the Iraqi Government by serious inter-tribal raiding which broke out last year; the principal offender being Shaikh Ahmed, who was seeking to impose his own peculiar religious doctrines upon neighbouring tribes. Owing to various factors, which these notes will attempt to present, the campaign is likely to be a more difficult task than previous operations which the Iraqi Government has undertaken against recalcitrant Kurdish tribes.

Shaikh Ahmed's territory is bounded on the South by the Greater Zab, and on the North by the Turkish frontier. To the East and West its limits are less sharply defined, but, roughly, the Barzan "sphere of influence" extends from Rowanduz, in the East, to within a few miles of Amadia, in the West. The term "sphere of influence" is used because the degree of the Shaikh's[1] control over certain tribes on his eastern and western borders varies with his power and prestige at any given moment. Nevertheless, the inhabitants of the central area—the real Barzanis—form a compact body, fanatically loyal to the Shaikh and hostile by tradition to government by any other authority.

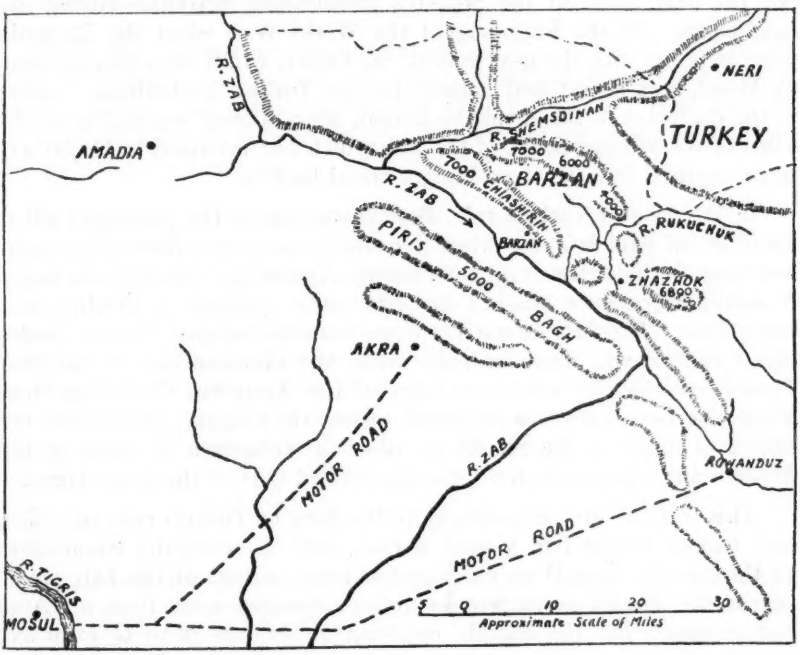
The country includes some of the highest mountain ranges of Iraqi Kurdistan, and, in its scenery, resembles the most rugged parts of Kashmir. In Spring the narrow valleys, well watered by tributaries of the Zab, are gay with masses of wild flowers and occasional patches of cultivation. The mountains hemming them in are fairly thickly covered with scrub oak near the bases, but their crests are bare masses of rock, snow-covered except at midsummer. Deep gorges, with precipitous upper faces often rising fully 2,000 feet above their beds, split the mountains. Frequently the only tracks which are passable to pack animals run through such ravines.

The Barzanis are typical mountaineers of splendid physique, and are armed almost uniformly with the pre-war Turkish Mauser. Their dress is also fairly uniform, a red and white chequered turban being universal. Trousers of brown home-spun yarn are of an "Oxford" cut, and every

[1] In Kurdistan the title of Shaikh does not merely mean a tribal leader, but a holy man whose title is generally hereditary.

man wears at least two—often three, or even four—bandoliers full of ammunition. Unlike Shaikh Mahmoud's followers in the Sulaimania area, who for years conducted an intermittent guerilla struggle against the Iraqi Government, none but the higher leaders among the Barzanis are mounted, for in such a country the horse has little military value and is expensive to forage.

Mentally, like almost all mountain Kurds, the Barzanis are dense and prone to take account of the exterior only, but they are unquestionally brave fighters and skilled tacticians in mountain warfare. In 1909,




when this area of Kurdistan was still part of the Ottoman Empire, the Turks sent a strong punitive expedition against the father of the present Shaikh. After some preliminary successes, the Turkish force was totally defeated, and a whole regiment with two mountain guns were captured. The Shaikh's victory may be partly explainable by the fact that a large proportion of the Turkish force consisted of tribal levies, drawn from neighbouring parts, who probably felt considerable doubt as to the rightness or advisability of fighting against such a holy man as the Shaikh.

Although his father was regarded with extreme veneration—and, incidentally had the reputation of a just and benevolent ruler, even over the Christian villages which he owned—and was himself, in his own person, a " Ziaret " or place of pilgrimage, Ahmed, his successor, a tall emaciated man of about thirty, with perhaps more than a touch of megalomania, has, by working upon the fanatical devotion of his ignorant tribesmen, endeavoured to become not only a place of pilgrimage in his own person, but almost an object of worship. This spiritual power he has attempted to exercise by force over villages on the southern bank of the Zab, outside his official domain. But religious fanaticism is perhaps not the only cause of the Shaikh's proselytising activities among his neighbours. At the beginning of the World War, when the Barzanis were at peace with the government, his father, whilst on a private visit to Mosul, was seized and hanged by the Turkish authorities. Later, in the confusion of the Armistice period, when Ahmed was still a youth, some of the villages South of the Zab which had belonged to his father, were acquired by other land-hungry tribal leaders.

In the days of Turkish rule, Barzan was one of the privileged tribal areas which paid tribute—when it could be extracted from them—and not taxes. Under the Iraqi government, Ahmed has continued to enjoy a semi-independence marked by alternating periods of docility and truculence. The first tentative move towards bringing Barzan under closer control was made in 1926, when the Commandant of the Iraq Levies, escorted by two companies of the Nestorian Christians from whom the Levies are now recruited, visited the country, partly with the object of inducing the Shaikh to allow his tribesmen to enlist in the Moslem units which at that time still formed part of the Levy Force.

This was the first occasion, since the days of Turkish rule, on which any regular troops had visited Barzan, and the company commander of the advance guard[1] on reaching the broad stream of the Zab, which marks the Shaikh's southern boundary, received news from an Arab police officer that the Shaikh, believing he was about to be attacked, had hastily collected 300 men to oppose the crossing. The strength of the Levy company was only 120, but the British officer in command at once sent a message to the Shaikh, assuring him that the force had no aggressive intentions.

Meanwhile, military necessity demanded that a bridgehead should be established without delay on the northern bank, which action must

[1] These experiences are typical of the tasks which single companies of the Iraq Levies, commanded by young British officers, often with only a few years service, were called upon to perform in the days before King Feisal's Army was sufficiently trained to operate in the difficult mountain regions.—EDITOR.

have seemed to the Shaikh as according ill with the company commander's pacific assurance. The only means of crossing the rapid flowing river—at this point 400 yards wide—was by small rafts of faggots tied to inflated goat skins, and before darkness fell only one platoon with the company's two Lewis guns had crossed. After an anxious night, the bridgehead was widened next day, both sides watching one another in an atmosphere of tension, since a single rifle shot might have precipitated a collision. All this time messages had been passing between the Shaikh and the company commander. It is probable, however, that seeing for himself the smallness of the Levy force, Ahmed was at length convinced of its pacific intentions.

After this Ahmed showed hospitality and a reserved friendliness towards the mission. A present of seven sheep was gratefully accepted by the Levies, and further assurances from the Commandant himself, who arrived a few days later, finally removed any remaining doubt from the minds of the Barzanis.

During the visit an example was afforded of his methods of government. Wishing to maintain the aloof traditions of a fighting race, the Shaikh gave orders to his tribesmen that they were not to sell anything to the troops. Any requirements, extra to rations, he himself would present to them, through the Commandant. Two unfortunates were caught in the act of selling sugar, and each had one ear removed forthwith by order of the Shaikh. Needless to say the Levy Commandant did not hear of this sentence until it had already been carried out. Although the project for enlisting the Barzanis never came to fruition, after this visit a police post was established at the town of Barzan and a closer supervision maintained over Shaikh Ahmed's somewhat arbitrary methods of government.

As regards the present campaign, a further difficulty is presented by the strong strategic position of the central Barzan massif. With the Zab on the South and the Rukuchuk and Shemsdinan rivers to the East and West, the tribesmen can hold a sort of natural fortress from which counter-attack is very easy. A force which crosses the Zab from the South is at once faced by the great Chia Shirin ridge, whilst columns operating from either East or West leave their communications open to attack from the North. Taking these circumstances into consideration, the campaign seems likely to be a protracted one, but prophecy regarding tribal rebellions is always dangerous, while there is one important factor which is on the side of the Iraqi Army. Kurdish tribesmen will fight bravely for a limited time, but dislike being long away from their villages and families, and after a spell of fighting are inclined to disperse.

In describing the progress of the recent operations, the Iraqi Ministry of Defence has been somewhat reticent in its communiqués.

The column which has been in action is based on Rowanduz, which it left on 15th March and moved north-westwards. In addition to Iraqi aeroplanes, one squadron and one flight of R.A.F. Wapiti bombers are co-operating. On 3rd April a British sergeant-pilot was killed by rifle fire, and on 5th April Major-General Rowan-Robinson, Inspector-General of the Iraqi Army, was wounded in the foot. Curiously enough, the commander of the Barzanis in this sector, Mulla Mustafa, a younger brother of the Shaikh, was also wounded, and is now lying with a broken leg in a village near Barzan.

These casualties occurred apparently during fighting for the Zhazhok defile, which on 8th April was reported as captured with heavy losses to the enemy. Zhazhok is about 13 miles, as the crow flies, from the town of Barzan, and leaves the crossing of the Rukuchuk river still to be faced. On 18th April, an Iraqi aeroplane crashed in the mountains, the pilot and observer being killed ; whilst it was reported that on the same day R.A.F. machines had caused severe loss to the enemy. The Barzanis have also made one offensive move by crossing the Zab and occupying the Piris Dagh. They retired again, however, when a column was despatched from Mosul to Akra in order to counter this raid.

An interesting feature of the operations was the supplying by air of the main Iraqi column when the tribesmen had succeeded, for a time, in cutting off a convoy.

These operations are still proceeding.

## IRAQ AND THE LEAGUE OF NATIONS

On 28th January the Council of the League adopted the following resolution in regard to the emancipation of Iraq from the mandate :—

" The Council having to consider the special case of the termination of the mandate for Iraq :—

(1) Notes the opinion formulated at its request by the Permanent Mandates Commission on the proposal of the British Government.

(2) Considers that the information available is sufficient to show that Iraq satisfies, generally speaking, the *de facto* conditions enumerated in the Annex to the Council resolution of 4th September, 1931.

(3) Declares itself prepared in principle to pronounce the termination of the mandatory regime in Iraq when that State shall

have entered into an undertaking before the Council in conformity with the suggestions contained in the Report of Permanent Mandates Commission, it being understood that the right to apply to the Permanent Court of International Justice may only be exercised by members of the League represented on the Council.

(4) Accordingly requests its rapporteurs for minorities questions of International Law and mandates and the representative of Great Britain on the Council to prepare in consultation with the representatives of the Iraqi Government, and if necessary with a representative of the Permanent Mandates Commission, a draft declaration covering the various guarantees recommended in the Report of the Permanent Mandates Commission, and to submit that to the Council at its next Session.

(5) Decides that, should the Council after examining the undertakings which would be entered into by the Iraqi Government, pronounce the termination of the mandatory regime over that territory, such decision will become effective only as from the date on which Iraq has been admitted to the League of Nations."

# CORRESPONDENCE

## ROBERT BLAKE

To the Editor of the R.U.S.I. Journal.

Sir,—I read with great interest the article by Colonel R. H. Beadon on "Robert Blake" in the February number of the Journal. Blake has a very good reputation in Dutch history for his humane treatment of our fishermen.

I should, however, like to draw attention to a common mistake amongst English authors in describing Blake's Dutch adversary as "Van" Tromp. His name was Maerten Harpertzoon Tromp. His first christian name is written by some authorities as Maarten, but the old Dutch spelling is more correct. The reason for the incorrect "Van" may be due to an inscription on the tombstone of Tromp's son.

Amsterdam,
*23rd March*, 1932.

H. Th. de Booy
Lieutenant, Royal Dutch Naval Reserve.

To the Editor of the R.U.S.I. Journal.

Sir,—I read with great interest Colonel R. H. Beadon's article about Blake, and I would like to give the Dutch point of view of certain aspects of Blake's victories over Van[1] Tromp and de Ruyter.

According to Dutch authors, the following actions took place in the First Dutch War (1652–1654):—

| *Date.* | *Name of Battle.* | *Name of Admirals.* | *Result of Battle.* |
|---|---|---|---|
| 29th May, 1652 | Dover | Tromp—Blake | Unsettled |
| 22nd Aug., 1652 | Plymouth | de Ruyter—Ayscue | Defeat of Ayscue |
| 8th Oct., 1652 | Downs | de Witt—Blake | Defeat of de Witt |
| 10th Dec., 1652 | Dungeness | Tromp—Blake | Defeat of Blake |
| 12/13th June, 1653 | Nieuport | Tromp—Monk/Deane | Defeat of Tromp |
| 8/10th Aug., 1653 | ter Hei'de | Tromp—Monk | Death of Tromp |

From the above we see that there was no battle between fleets commanded by Blake and de Ruyter. As a matter of fact, de Ruyter fought under Tromp's orders in the battle of Dungeness, when Blake was defeated. Colonel Beadon says "five major actions were contested, and in four of them the English were completely victorious," but according to (impartial !) Dutch historians the British were defeated in two of the five contests.

---

[1] With reference to the letter which precedes this it is interesting to note that certain English writers are not alone in giving the "Van" to Tromp.—Editor.

All the same, Blake, the General-Admiral, will remain, from the Dutch point of view, one of the greatest Admirals England ever had. Perhaps it is not so well known in England why, apart from his tactical and strategical abilities, Admiral Blake was so much esteemed in Holland. Although his instructions were to destroy all Dutch fishing craft he might meet, he contented himself with forbidding any Dutch fishermen he encountered to enter British territorial waters. For this humane behaviour, however, he was attacked in England and never got any thanks from his Dutch antagonists.

A. DE BOOY
Lieutenant-Commander, Royal Dutch Navy.

Soerabaja,
Dutch East Indies.
*2nd April*, 1932.

## NEW PATTERN SERVICE DRESS

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—According to the daily press, the Army authorities are considering new patterns of service dress for issue to the "other ranks," and the following suggestions are alleged to have been made:—service dress jacket, with open neck and worn with collar and tie; "plus-four" knickerbockers; gaiters.

There seem to be some very definite objections to these articles. Apart from the inconvenience of collars, ties and (presumably) studs, they are not practical in use. They constitute a bandage of three thicknesses of flannel round the throat, and anyone who has had experience of digging or of doing any hard physical work in them, especially if the collar is slightly shrunk, will realise that they are certainly very uncomfortable and probably very unhealthy. The "plus-four" knickerbockers are very apt to hold the water at the knee in wet weather, when they become most uncomfortable and take a long time to dry. Gaiters have already been discarded by the American Army in favour of puttees; besides, to avoid chafing, they must be fitted to the man, a process not practicable in war.

The following suggested alterations are, I believe, both practical and desirable:

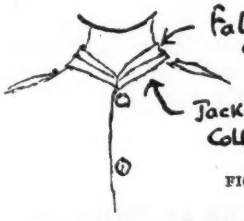


FIG. 1

*S.D. Jacket*:—Open-neck collar, but with opening not too low. Worn with it should be a "false" collar of khaki flannel, which would be buttoned to the jacket on the inside and folded over the jacket collar, providing a washable intermediary between the jacket and the neck. No other neckwear would be required. See Fig. 1.

The side pockets to be larger than at present and to be half-moon shape, so as to be easily accessible. See Fig. 2. The front skirts of the jacket should be slightly rounded off so as to avoid the untidiness of the straight front which is always getting out of shape.



FIG. 2

Cuffs might be added to the sleeve with advantage. These should be deeper on the

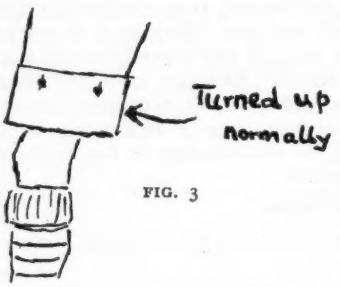



FIG. 3

outside than on the inside, so that on service they could be turned down to give protection to the outside of the hand in cold weather.

*Shorts* :—Except in very cold or very rough country, shorts are the most practical nether garments for infantry. They give plenty of freedom and are healthy. They should, however, have a substantial turn-up at the bottom (kept in position by buttons, if necessary), which could be turned down to cover the knee in unfavourable conditions. See Fig. 3.

*Puttees* :—These articles come in for a good deal of criticism from the medical authorities, but it is hard to find another device to serve the same purpose which is not open to similar objections. After all, the puttee is very easily adjusted when the leg swells, and the type now issued has a good deal of elasticity in itself. Still more elasticity could be obtained if hose-tops (the inside portion to reach the top of the sock) are worn. Therefore, I would suggest the issue of puttees and hose-tops, the fold over of the latter being used as an additional protection to the knee when required.

*Overcoat* :—The present ground-sheet-cape is not a good wet weather covering, as the knees are not protected and receive all the drips from the cape. Neither is the great-coat ideal for service purposes, in that it is fitted and issued to the individual, necessitating considerable sorting when, on service, great-coats arrive up on the baggage lorries at night.

The following would appear far more practical :—

(*a*) A serviceable mackintosh coat, long enough to cover the knees, but light enough to be carried easily in the pack.

(*b*) A "jerkin," similar to that issued during the War, but in leather or sheep-skin, armless, and long enough to cover the thighs. This could be made in one size only and, therefore, issued to any man indifferently. It would be worn under the mackintosh.

*Headress* :—The present field service cap is a bad one. The type worn by skiers in the Alps would be ideal. It is soft, has a curtain at the back, to be dropped if required, and has a peak giving good protection for the eyes.

London, "A READER."

*March*, 1932.

## LEAVE AND RECREATION FOR SOLDIERS IN INDIA

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—It is an unfortunate fact that leave for British soldiers in India is one of the most difficult problems which face British units there to-day. For the most part, men have to be content with one of the following three means of expending it :—

(*a*) Taking leave in a hill station at a soldiers' home. The charges are small, the value given is great, and the results are most beneficial.

These homes and camps do most excellent work, but unluckily their accommodation is very limited indeed.

(*b*) Shooting. This is not as popular as it used to be, due no doubt to difficulties of language and the increased cost of transport.

(*c*) Leave taken in a larger cantonment. This involves little radical change in mode of life because attachment to a unit is inevitable. The results are not good as the men are so much at a loose end.

Now it is clear that the soldier in England is very much better off; he can get right away from his unit and military life, and go to his own home and family. Further, the conditions of life and climate at home are such that leave, though most desirable, hardly amounts to a necessity.

The logical outcome of this comparison is surely that it is most important that the soldier in India should receive more assistance in this matter, so that he will be able to have a good holiday in a country where he really does need it, and to which he is of necessity tied for a number of years. But this could only be done by the establishment of more leave centres in the hills, and would cost money.

In India, facilities do not exist for holding large tattoos and horse shows. In England these facilities do exist, and it appears that very large profits result therefrom. The balance sheet of the Aldershot Command Trust shows that these profits are devoted to charities, grants, improvements, recreation allotments, etc. But as nearly all soldiers serve abroad—the majority in India, it is suggested that an annual allotment for the establishment of leave centres might be made from the profits of the various tattoos. This would be very much appreciated by the soldier in India, where facilities for money-making are far less than in England, while the need for leave is incomparably greater.

Tidworth. R. H. BOWER

*March*, 1932. Lieutenant, K.O.Y.L.I.

## REGIMENTAL BADGES

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—With reference to my article on Army badges and buttons, which appeared in the February number of the JOURNAL, may I make the following amendment to the paragraph dealing with the design of the Royal Crest? The last part of the paragraph should read :—

> " In the case of the 28th now 1st Gloucestershire, of the 47th now 1st Loyals, and of the 50th now Royal West Kent, the lion was uncrowned until after 1881 on the buttons."

Might I further point out that in the paragraph treating of the design of the castle of Gibraltar (top of page 136) the " 58th " is an error for " 56th."

Also may I record that the latest issue of the Gibraltar badge has been designed without any windows at all, and this in spite of the recent plea in the Press for a more hygienic Army.

Camberley, H. G. PARKYN

*March*, 1932. Major.

## THE MINDEN ROSE

To the Editor of the R.U.S.I. Journal.

Sir,—I shall be grateful if any reader will furnish authentic information as to the wearing of roses on 1st August to commemorate the battle of Minden, 1759.

The delightful tradition is that the men picked roses as they marched to the battlefield and placed them in their headdress. We know that the troops moved off from their bivouac that Wednesday morning at 3.30 a.m. in a gale of wind, which followed a prolonged rainstorm, and were in action at 4.0 a.m. The sun rose at 4.30 a.m. and the battle was over by nine. Neither recently nor 173 years ago, I understand, were roses grown in any large quantity in the neighbourhood. I have not seen any contemporary account of the battle which mentions the incident, nor can I discover that prior to 1860 roses were worn by the Minden regiments on the anniversary of the battle.

It is definitely recorded that at the attack on the Island of Walcheren on 1st August, 1809, and in The Peninsula on Minden Day, 1813, the men of the 51st Light Infantry wore sprigs of laurel and other green foliage in their shakos to commemorate the battle of 1759, and the oval Minden wreath of Laurel and Bay is depicted on plate presented to the officers about 1860; but nowhere can I find mention of roses until some years after the centenary of Minden, the celebration of which was clouded by the aftermath of the Crimea and the Indian Mutiny.

The six regiments of British infantry who at Minden "stood firm like a brazen wall and then charged the enemy cavalry ranked three deep in order of battle" are:—

12th (Lieut.-General Robert Napier), now The Suffolk Regiment;

20th (Major-General William Kingsley), now The Lancashire Fusiliers.

23rd (Lieut.-General John Hulke), now The Royal Welch Fusiliers;

25th (Lieut.-General William Earl Howe), now The King's Own Scottish Borderers;

37th (Lieut.-General the Hon. James Stuart), now The Hampshire Regiment;

51st (Major-General the Hon. Thomas Brudenell), now The King's Own Yorkshire Light Infantry.

Two of these Minden Regiments now display the rose as a badge on the regimental Colour, but this embellishment has been conferred within the last seventy years. The Lancashire Fusiliers show the red rose, although the 20th Fusiliers had no territorial connection with Lancashire prior to 1870. The King's Own Yorkshire Light Infantry had been connected with Yorkshire since 1756, although the territorial title was not conferred till 1783.

My impression is that an almost subconscious recollection of the tales of the Wars of the Roses coupled with the wearing of the Red Rose of St. George by the Fifth Fusiliers in more recent times, has given birth to the custom during the last seventy years. But I much hope that far more definite proof of the wearing of roses prior to 1860 may be forthcoming.

Kenya,
*March*, 1932.

C. R. T. Thorp
Major.

## TERRITORIAL BRIGADE STANDING ORDERS

To the Editor of the R.U.S.I. Journal.

Sir,—The letter on "Territorial Brigade Standing Orders," which appeared on page 180 of the February number of the Journal, prompts the enquiry whether Captain A. E. B. Plummer is not indulging in a dangerous generalization. In his "fortunate" infantry brigade, the four battalions belong to one regiment, obtain regular assistance from one depot and are administered by one Territorial Association, while at present the home line battalion is stationed within the same command. I do not doubt that Captain Plummer's conclusions are correct in so far as his battalion is concerned.

I will now outline the conditions of a neighbouring brigade. The four battalions belong to three regiments and depots. One is a light infantry battalion. They are administered by three County Associations. One battalion has sixteen detachments of which nine are administered by one County Association, the remainder by another. The home line battalion of two T.A. battalions is stationed in a distant command. In these circumstances I doubt whether Brigade Standing Orders would be welcome; indeed, I believe their issue would be unfortunate.

It is now officially recognised that an insistence on rigid uniformity in matters of detail, both in training and in administration, does not benefit units of the Territorial Army. Environment must be taken into consideration. The experiences of "The Territorial Year" (1930) drove this lesson home.

London, H. W. B. Thorp

*February*, 1932. Colonel.

# GENERAL SERVICE NOTES

## FRANCE

### A Ministry of Defence.

On the formation of a Conservative government by M. Tardieu, on 21st February, a reduction was made in the numerical strength of the Cabinet as a measure of economy. The principal change was the grouping of the Ministries of War, Marine and Air under one Minister of Defence, M. Piétri, who is assisted by two Under-Secretaries. Among other desired advantages is that there shall now be an end to the controversy between the advocates of an autonomous and a subordinate Air Force. The control of civil aviation, as of the Merchant Navy, is now vested in the Minister of Public Works.

The reorganization of the Ministry of Defence is being carried out in stages, and the object is to co-ordinate rather than to mingle the existing Services, which will retain their independence.

On 9th March, M. Tardieu and M. Piétri appeared before the combined Naval, Military and Aeronautical Committees of the Chamber and explained the change. M. Tardieu said that the geographical position of France, her scattered colonies, and the steady extension of the means of waging war, demanded the closest collaboration and co-ordination of all arms, if national security was not to be endangered. This inter-dependence could only be fully assured by the formation of a Ministry of National Defence, which would be free from the pre-occupations and rivalry which had resulted from the existence of separate Ministries for naval, military and aeronautical affairs. Moreover, France would thereby be enabled to present to the League of Nations in the clearest possible form her position and her needs. Thus the reproach of hiding military expenditure in apparently non-military budgets would fall to the ground, while at the same time large economies would be effected.

## UNITED STATES

### A Department of National Defence Bill.

In view of the fact that in the new French government there is a Ministry of Defence, it is interesting to note that a bill for the creation of a Department of National Defence is now being examined by a Committee of Congress.

The subject has been discussed at various times since 1923, and numerous bills have been introduced in Congress without success. The sponsors of the present bill, however, claim that it will effect large economies, an argument which carries great weight at the present.

The proposed Department of National Defence would be in charge of a secretary; under him there would be three assistant secretaries in charge of the Army, Navy and Air Forces. The present Secretaries of the War and Navy

Departments have given evidence before the Committee of Congress which is examining the bill; both are opposed to it on the grounds that the present organization of the War and Navy Departments is the most suitable for carrying out the tasks required. The consolidation of the Army Air Corps and the Naval Air Service under a single assistant secretary, instead of being under the War Department and Navy Department as at present, is strongly opposed by the Secretary of the Navy. On the other hand, the Chief of the Army Air Corps contends that consolidation would be beneficial, but that a thorough investigation must first be carried out as to how it should be done.

The bill has got a considerable political backing, and there is a possibility that it may fare better than its predecessors.

### Combined Exercises.

Combined Exercises.—During the first ten days of February, the Battle Force, under Admiral Richard H. Leigh engaged in " Grand Joint Exercise No. 4 " off Hawaii with military forces there under the command of Major-General Briant H. Wells, Commanding the Hawaiian Department, U.S.A. Admiral F. H. Schofield, Commander-in-Chief of the United States Fleet, accompanied the operations in his flagship the " Pennsylvania," and in his report to the Navy Department he referred to the exercise as one of the most successful yet carried out by combined army and navy forces.

A " Blue " Force, composed of the Battle Fleet, U.S. Fleet, with an expeditionary force in company, gained a foothold on the western end of Cahu Island, landing troops, animals and equipment. The problem set the " Black " Force, composed of local army and navy units, was to maintain possession of the islands against the attackers. A " critique " of the problem, attended by 350 senior naval officers, was held subsequently at Pearl Harbour.

## THE ROYAL TOURNAMENT

His Majesty the King will open the Royal Tournament this year on Wednesday, 25th May, and will be accompanied by the Queen. The triple Guard of Honour will be composed of 300 men from the Royal Navy, the Regular Army and the Royal Air Force, with the King's Colour.

# NAVY NOTES

## GREAT BRITAIN

### ROYAL UNITED SERVICE INSTITUTION.

In a Fleet Order (No. 751 of the 1st April, 1932), the Admiralty call attention to the suspension of the entrance fee for membership of the Institution, and to the special facilities it affords officers for professional study.

The Order concludes " Their Lordships desire it to be known that they wish to give every encouragement to officers to join the Institution, compete for the essay prizes and take part in the debates after Lectures."

### The Navy Estimates.

The Navy Estimates for 1932-33 were issued on 3rd March (No. 48, price 9s.), accompanied by the Statement of the First Lord of the Admiralty (Cmd. 4024, price 3d.). The net total of the Estimates was £50,476,300, which was £1,128,700 less than the net total of the 1931 Estimates.

The First Lord explained that the Estimates had been framed with strict reference to the needs of the financial situation, and must not be regarded as an adequate provision for the Navy. " On the contrary," said Sir Eyres Monsell, " I am satisfied that on the basis of considering actual requirements, not even the most rigid scrutiny could have justified the restriction of Navy Estimates to such a figure. Under the scheme, however, for the reduction of national expenditure laid before Parliament last September, £50,476,300 is the sum which remains available for naval services in 1932, and the Estimates which I am presenting indicate what, in the judgment of the Board of Admiralty, is the most advantageous way of distributing it amongst those services."

The new construction programme for 1932, practically a repeat of that approved for 1931, consists of :—Two cruisers, " Leander " class ; one cruiser, " Arethusa " class (5,000-6,000 tons) ; one leader and eight destroyers ; four sloops ; three submarines ; one shallow draught gunboat ; one destroyer depot ship ; and small craft (one boom defence vessel, one tug, two tenders and three lighters). The destroyer depot ship is required to replace the " Sandhurst," depot-ship in the Mediterranean Fleet, which is almost thirty years old and approaching the end of her effective life.

Vote A (Numbers) for 1932 stands at 91,410 officers and men, a maximum which may not be exceeded. This compares with a total of 93,650 in the previous year. In addition, a total of 865 in the Royal Marine Police was included in the Estimates, as compared with 550 in 1931.

The Navy Estimates were introduced in the House of Commons on 7th March, when Sir Eyres Monsell explained the main heads under which economies had been made. As regards personnel, he said the Navy had been indulging in a good deal of stocktaking, and he outlined some of the conclusions arrived at. It was imperative to assure the young officers of reasonable prospects of promotion,

and this could only be achieved by making the necessary clearances at the top of the list. The broader aspects of the training of personnel had suffered because so much attention had been given to achieving weapon efficiency. Action is to be taken in the following directions :—

(1) There should be some form of seagoing training for Cadets after leaving Dartmouth, and for boys after leaving their training establishments.

(2) To enable officers to gain sea experience and keep in touch with their men, more general service should be given them, with less changes during a ship's commission.

(3) Promotion to petty officer is being carefully examined to ensure due weight being given to powers of leadership and command.

### Flag Appointments.

Mediterranean Command.—Vice-Admiral Sir William W. Fisher, K.C.B., C.V.O., who was relieved on 12th April in command of the First Battle Squadron, and as Second-in-Command, Mediterranean Fleet, is to be Commander-in-Chief, Mediterranean, in succession to Admiral Sir A. E. M. Chatfield, K.C.B., K.C.M.G., C.V.O., to date about October next.

China Command.—Vice-Admiral Frederic C. Dreyer, C.B., C.B.E., now Deputy Chief of the Naval Staff, is to be Commander-in-Chief, China Station, in succession to Admiral Sir W. A. H. Kelly, K.C.B., C.M.G., M.V.O., to date about February, 1933.

Plymouth Command.—Vice-Admiral Eric J. A. Fullerton, C.B., D.S.O., now Commander-in-Chief, East Indies Station, where he is to be succeeded by Rear-Admiral M. E. Dunbar-Nasmith, V.C., C.B., on 13th June, has been appointed Commander-in-Chief at Plymouth, in succession to Admiral the Hon. Sir Hubert G. Brand, K.C.B., K.C.M.G., K.C.V.O., to date 8th October.

Australian Command.—The Admiralty announce that, with the concurrence of the Australian Government, Rear-Admiral R. C. Dalglish has been lent to the Royal Australian Navy from 12th February, to command H.M. Australian Squadron. He succeeded Commodore L. S. Holbrook, M.V.O., from the date of disembarkation at Sydney (7th April, 1932).

Battle Cruiser Command.—Rear-Admiral William M. James, C.B., is to be Rear-Admiral Commanding the Battle Cruiser Squadron, in succession to Vice-Admiral Wilfred Tomkinson, C.B., M.V.O., undated. Rear-Admiral Tomkinson was promoted to the rank of Vice-Admiral to date 15th February, 1932, and reappointed in command of the Battle Cruiser Squadron.

Third Cruiser Squadron.—Rear-Admiral F. L. Tottenham, C.B.E., succeeded Vice-Admiral B. E. Domvile, C.B., C.M.G., in command of the Third Cruiser Squadron on 2nd February, 1932.

Reserve Fleet.—Vice-Admiral W. M. Kerr, C.B., C.B.E., was appointed Vice-Admiral Commanding, Reserve Fleet, in succession to Vice-Admiral Frank Larken, C.B., C.M.G., to date 22nd April, 1932.

Second Sea Lord.—Vice-Admiral A. D. P. R. Pound, C.B., has been appointed a Lord Commissioner of the Admiralty and Chief of Naval Personnel, in succession to Admiral Sir Cyril T. M. Fuller, K.C.B., C.M.G., D.S.O., undated.

Fourth Sea Lord.—Rear-Admiral Geoffrey Blake, C.B., D.S.O., has been appointed a Lord Commissioner of the Admiralty and Chief of Supplies and

Transport, in succession to Vice-Admiral L. G. Preston, C.B., to date 20th September, 1932.

ADMIRALTY POSTS.

PAYMASTER DIRECTOR-GENERAL.—Paymaster Captain Edward F. Murray has been appointed Paymaster Director-General, Admiralty, with the rank of Paymaster Rear-Admiral, in succession to Paymaster Rear-Admiral Sir H. W. Eldon Manisty, K.C.B., C.M.G., to date 1st July.

ACCOUNTANT GENERAL'S DEPARTMENT.—As from 1st May, 1932, the Department of the Accountant-General of the Navy ceased to exist as a separate department. Its duties and those of the Department of the Secretary were merged in a combined Secretarial and Financial Department under the Secretary of the Admiralty. From the same date, an officer with the title of Director of Navy Accounts, who will have the rank of Assistant Secretary, will exercise the functions in regard to cash transactions, whether receipt or payment, affecting naval funds which have hitherto been exercised by the Accountant-General of the Navy.

PRINCIPAL ASSISTANT SECRETARY.—Mr. J. S. Barnes, C.B., O.B.E., Assistant Secretary, was appointed Principal Assistant Secretary (acting), temporarily, from 2nd February, 1932.

ADMIRALTY LIBRARIAN.—Mr. D. Bonner Smith, Deputy Librarian, succeeded Mr. J. Falkner Phillips, M.B.E., as Admiralty Librarian on the latter's retirement from the Civil Service on 31st March. Mr. H. W. Brookling, senior clerical officer at the Imperial Defence College, was appointed Deputy Librarian.

PERSONNEL.

LIEUTENANT-COMMANDERS' RETIREMENTS.—It was announced in Fleet Orders on 26th February that applications to retire under the special scheme promulgated in A.F.O. 289/31 (see page 433, JOURNAL for May, 1931) will in future be considered as they are received. The retirements will not be effected in batches as hitherto, and applications should, therefore, be forwarded as soon as possible. The scheme is now confined to Lieutenant-Commanders of seniority of the second half of 1924 and later years.

ACCOUNTANT DIVISIONAL SYSTEM.—It has been decided to organise Accountant Branch ratings into Accountant Divisions wherever the numbers of Accountant officers and ratings permit. For this purpose the Divisional officer will be the Paymaster Lieutenant-Commander or Paymaster Lieutenant, and the division is to be divided into sections, according to the duties of the various departments, under definitely assigned C.P.Os. and P.Os. of the department. The men will thus receive continuous individual attention from the same higher ratings.

STUDY OF NAVAL HISTORY.—The Board have noted with regret that no entries were received in 1931 for the annual competition in naval history. Commanding officers are directed to call the attention of all junior executive officers to the existence of this competition and the valuable prizes offered. The receipt by an officer of a prize or certificate will be noted in his official record.

GOODENOUGH MEMORIAL PRIZE.—The Goodenough Memorial Prize for the year 1931 has been awarded to Sub-Lieutenant J. G. Hamilton, R.N., of H.M.S. "Hood."

JACKSON-EVERETT PRIZE.—The Jackson-Everett Prize for 1931 has been awarded to Lieutenant B. T. Turner, R.N., of H.M.S. "Nelson."

SEAMEN'S DRESS.—A new pattern blue cloth cap for seamen has been adopted, without a wire grommet, and with the stiffener carried to the edge of the crown

as in the latest pattern white duck cap. A modified type of brown canvas shoe without the leather cross-band and with a soft leather toe cap has also been adopted. The issue of check shirts with short sleeves to men and boys on first entry, or when being kitted up for sea, is to be discontinued.

PAY CONCESSION.—The reduced rates of full pay and half pay established with effect from 5th October, 1925, or, in certain cases, 16th October, 1926, for commissioned officers from warrant rank and Lieutenants promoted therefrom, have been cancelled. As from 1st October, 1931, the rates of pay of these officers are the 1919 standard rates, less 11 per cent. These rates are subject to half-yearly adjustment in relation to the cost of living.

MECHANICAL TRAINING.—Engineer Captain F. S. Carlisle has been appointed in command of the Mechanical Training Establishment at Chatham, which has taken over the training of boy artificers, formerly carried on in the "Fisgard" at Portsmouth. An Order in Council published in the *London Gazette* on 12th April, 1932, authorised the payment of command money and entertaining allowance at the daily rates of 7s. and 5s. respectively to the Engineer Captain in command of the Establishment, with effect from the 1st day of January, 1932, the date of this appointment.

## RETIRED NAVAL OFFICERS' EMPLOYMENT.

NEW COMMITTEE.—On 26th February, the Admiralty announced in Fleet Orders that a small committee had been appointed to assist in and co-ordinate the work of finding employment for Naval and Marine officers in civil life hitherto carried out by the Naval Personnel Committee. It is known as the R.N. and R.M. Officers' Civil Employment Committee, and its members are:—Admiral Sir Aubrey C. H. Smith, K.B.E., C.B., M.V.O.—Chairman; Paymaster Rear-Admiral H. R. Russell, C.B., C.M.G.—Hon. Treasurer; Captain W. J. Whitworth, D.S.O., R.N.—Naval Personnel Committee (*ex-officio*); and Paymaster Lieutenant-Commander D. F. Forbes, R.N.—Naval Personnel Committee (*ex-officio*), Secretary.

To maintain touch with the business world, Commander J. O. Wyatt, O.B.E., R.N., retired, has been engaged to act as liaison officer. The address of the Committee and liaison officer is: Queen Anne's Chambers, Dean Farrar Street, S.W.1. (Telephone: Victoria 8556; extension 28).

## MATERIAL.

THE 1929 PROGRAMME.—The one cruiser building under this programme, H.M.S. "Leander," is expected to carry out trials towards the end of the year and to complete early in 1933.

The flotilla leader "Kempenfelt" should be ready to leave the builders' yard at Cowes at the end of May. Of the four destroyers, the "Cygnet" commissioned at Devonport on 5th April for service in the Second Flotilla, which has been transferred from the Mediterranean to the Home Fleet. The "Crescent," "Crusader," and "Comet" were to follow her into this Flotilla when ready during April and May.

The three submarines of the programme, "Thames," "Swordfish," and "Sturgeon," will not be ready until between September, 1932, and February, 1933.

Of the four sloops in the programme, the "Fowey," "Bideford" and "Shoreham" were finished in 1931, and are now serving in the Persian Gulf.

The " Rochester " was commissioned at Chatham on 24th March for service on the Africa Station in place of the " Cyclamen."

THE 1930 PROGRAMME.—Work is proceeding on the three cruisers of this programme with a view to the " Achilles " being launched in September, 1932, and the " Neptune " and " Orion " early in 1933.

The first torpedo craft of the programme to be put afloat were the " Daring," at Thornycroft's, and the " Defender," at Vickers-Armstrongs', Barrow, both on 7th April; and the " Diamond," at Barrow, on 8th April. The submarines " Porpoise," " Seahorse " and " Starfish " are building on the stocks.

The first of the four sloops to take the water was the " Falmouth," at Devonport, on 19th April.

THE 1931 PROGRAMME.—The names of the three cruisers of this programme will be as follows :—the vessel of the " Leander " class to be built in Portsmouth Dockyard—H.M.S. " Amphion " ; the contract-built vessel of the same class—H.M.S. " Ajax " ; the smaller cruiser to be built in Chatham Dockyard (5,000-6,000 tons)—H.M.S. " Arethusa."

THE 1932 PROGRAMME.—This programme has been mentioned under "Navy Estimates." In his speech on 7th March, the First Lord said he had included a sum in the Estimates " for starting the 1932 building programme at the normal time in March of next year."

### ORGANISATION AND DISTRIBUTION.

RE-ORGANISATION OF THE MAIN FLEET.—Changes in the constitution of the Mediterranean and Atlantic Fleets, mainly in the interests of economy, were outlined by the First Lord in his Estimates speech, and communicated by Fleet Order 593 on 11th March, 1932. The number of battleships allotted to the Mediterranean is to be reduced from six to five when H.M.S. " Ramillies " returns to pay off for large repair. The reduced number of battleships allotted to the Mediterranean will remain in commission with full peace complement as at present, and should always be available on the Station except for short periods for re-commissioning or refitting at home, the intention being that when one of these ships is undergoing large repair she shall be relieved by a ship of the same class from home. Only one aircraft-carrier—H.M.S. " Glorious "—is to be attached to the Mediterranean Fleet, subject to the proviso that if she is withdrawn for any length of time another large carrier will relieve her temporarily. H.M.S. " Eagle," now paid off for large repair, will accordingly not rejoin the Mediterranean Fleet. The number of destroyer flotillas in the Mediterranean is to be reduced from four to three. This change took effect when the Second Flotilla returned to home waters in March.

ATLANTIC FLEET RENAMED.—The title of Atlantic Fleet was altered to that of Home Fleet when the Fleet passed Ushant on its return from the spring cruise on 12th March, 1932. Of the ten capital ships which will be at home (seven battleships—including one withdrawn from the Mediterranean—and three battle cruisers), three are to be treated as being in reserve, and for these three ships provision is to be made under Vote " A " for only 70 per cent. active service crews, but 100 per cent. of higher non-substantive ratings, as a mobilisation requirement. As a consequence of this decision, H.M.S. " Barham " will now be treated as being in reserve, and on completion of large repairs about March, 1933, will not rejoin the fleet unless she is required to take the place of another battleship.

H.M.S. " Repulse " will cease to belong to the fleet, and will be treated as being in reserve, her place in the fleet being taken by H.M.S. " Renown." The third capital ship to be placed in reserve in the first instance will be H.M.S. " Ramillies." The remaining seven capital ships at home will all be kept in commission, and full active service crews will continue to be provided for all of them under Vote " A " as a mobilisation requirement, as at present, but they are to carry in peace only about 4/5ths of their full war complements, with some slight adjustment upwards in engine room complement.

AIRCRAFT CARRIERS.—H.M.S. " Courageous " and H.M.S. " Furious " are to remain in commission with full complement as at present, but H.M.S. " Eagle " will normally remain in reserve, although provision will be made for a full active service crew for this vessel on mobilisation, as at present. Except in the case of new ships in their first commission, the three destroyer flotillas in home waters (though provision for mobilisation requirements will be made as at present) are actually to carry only about 4/5ths of their complements, with, however, 100 per cent. of engine room ratings.

CRUISERS OVERSEAS.—It is intended to employ some of the new 10,000-ton cruisers on the America Station, and the first will be H.M.S. " Norfolk," which recommissions at Devonport in late August or early September for foreign service in anticipation of her transfer. In the meantime, she will continue to serve in the Second Cruiser Squadron. Cruisers of the " D " class relieved on the America Station are expected to join the Third Cruiser Squadron, Mediterranean, relieving the " C " class now in that squadron.

IRISH DESTROYER DIVISION.—It has been decided that the " Sturdy " and " Tenedos " are to be replaced by the " Amazon " and " Ambuscade " as destroyers in Irish waters. H.M.S. " Amazon " will be the Senior Officers' ship. After relief the " Sturdy " and " Tenedos " will be reduced to reserve.

SECOND FLOTILLA RECONSTITUTED.—The Second Destroyer Flotilla left Gibraltar for home on 17th March on its withdrawal from the Mediterranean. The flotilla leader " Stuart " was ordered to relieve the " Adamant " as leader of the Second Submarine Flotilla. Her place will be taken by the " Kempenfelt." The " Vanessa," " Viscount," " Valentine " and " Winchelsea " were withdrawn from the Flotilla and their places taken by the new destroyers " Cygnet," " Crescent," " Crusader " and " Comet."

## EXERCISES AND CRUISES.

HOME FLEET.—Ships and flotillas of the Home Fleet dispersed to their ports on 14th March, and Easter leave was granted in two watches, from 22nd March to 6th April, and from 6th April to 21st. The vessels left on 26th to 28th April for Invergordon and Scapa Flow. From 4th June, they are to cruise independently, reassembling at Weymouth from 8th to 15th July.

MEDITERRANEAN.—The spring cruise of the Mediterranean Fleet took place from 10th March to 22nd April. From 12th to 21st April, the whole Fleet visited Naples, during which there was a round of entertainments. Admiral Sir Ernle Chatfield and his staff visited Rome, where Sir Ernle was received by the King of Italy, Signor Mussolini, Signor Grandi, and Admiral Sirianni, Minister of Marine. The Italian Crown Prince and Princess visited the " Queen Elizabeth," and were entertained to luncheon. The Fleet later visited several places on the Riviera.

America Station.—On 29th March, the " Durban " and " Dauntless " arrived at Bermuda to join up with the rest of the Eighth Cruiser Squadron for the first time since their constitution in the previous September as a separate South American Division. All five ships of the Squadron were to have remained in company until May, but on the receipt of reports of disturbances at St. John's, Newfoundland, the " Dragon " left Bermuda on 9th April and arrived at St John's on the 12th, where she remained for five days.

East Indies.—The Fourth Cruiser Squadron was at its base at Trincomalee throughout February, and separated between 7th and 14th March for independent cruises to Indian ports. The Squadron has been ordered to reassemble at Trincomalee between 20th and 30th May, and at Colombo from 31st May to 4th June.

China Station.—The flagship " Kent " and several other ships have been at Shanghai or the vicinity during the past quarter. The " Devonshire," from the Mediterranean, arrived at Hong Kong on 14th March to replace the " Berwick," which left for England to refit and recommission.

### Miscellaneous.

1932 Navy Weeks.—The annual Navy Week at Portsmouth, Devonport and Chatham will be held this year from Saturday, 30th July, to Saturday, 6th August, both dates inclusive, but excepting Sunday, 31st July. The charge for admission to the yards will be 1s. as formerly; children under 14, 6d.

Awards for Inventions.—The Royal Commission on Awards to Inventors will not entertain new applications for awards received after 31st March, 1932. A Central Awards Committee has been set up by H.M. Government, and future applications from persons in the service of the Admiralty will be dealt with either by Their Lordships or by this Committee.

Armed Guards Against Piracy.—On 11th April, the Court of Appeal dismissed an appeal by the China Navigation Company, Ltd., from a decision of Mr. Justice Rowlatt dismissing an action they had brought against the Attorney-General raising the question of the liability of shipowners to pay for guards against pirates provided by the Crown in ships trading in Far Eastern waters. The Company complained that they had been compelled to pay the whole of the expenses of the guards, and contended that this expense had been covered by the House of Commons Votes, to which they contributed as taxpayers. Lord Justice Scrutton, giving judgment, said that some 200 British ships were affected, and the company themselves calculated that they wanted 200 guards. He (the Lord Justice) entirely agreed with Mr. Justice Rowlatt that there was no legal duty on the Crown to afford, by military force, protection in foreign parts to British subjects. Had the Crown a duty to follow and protect the missionary and send armed forces to rescue him from his self-imposed danger? A shipowner, without the assent of the Crown, traded for purposes of his own profit in neighbourhoods which were insufficiently policed by foreign governments; had the Crown a legal duty to protect the shipowner? The action was misconceived, and the claim must be dismissed.

## FLEET AIR ARM.

Rear-Admiral (A) at Malta.—On 16th January, Rear-Admiral R. G. H. Henderson, C.B., commanding Aircraft Carriers, arrived at Malta in the " Courageous," on his first visit to the Mediterranean Fleet since his appointment.

The "Courageous" and "Glorious" left on the 19th to join the Fleet in Vatika Bay, where they spent a week. Both carriers then returned to Malta, and left there on 22nd February for exercises, and four days later arrived at Gibraltar. Here they were to have been joined by the "Furious," which had been recently completed to full complement after repairs, but owing to delays the "Furious" remained at home, and carried out flying practices from Portsmouth.

H.M.S. "Courageous" visited Lisbon on the 4th March and her aircraft gave a striking display over that port, full details of which will be found in *The Aeroplane* of the 16th March, page 468.

Replying to a question in Parliament on 14th March, Lord Stanley, Financial Secretary to the Admiralty, stated that the Rear-Admiral, Aircraft Carriers, would not exercise control over the carriers attached to fleets other than the Atlantic Fleet, but would act as Naval Adviser to the Commanders-in-Chief of other fleets on all matters connected with the Fleet Air Arm.

H. L. Carslake Prize.—The subject of the essay for the award in 1933 of the Henry Leigh Carslake Prize for Naval Observers is as follows:—"The management of large forces of aircraft at sea, involving the tactical co-operation of several carriers." Essays must reach the Admiralty by 1st February, 1933. Particulars regarding this prize are contained in the Appendix to the Navy List.

Officers' Flying Practice.—Details of the arrangements for affording flying practice to R.N. and R.M. pilots attached to the R.A.F. when temporarily appointed to general service or corps duty were published in Fleet Orders on 11th March. For the purpose of this order, R.N. and R.M. officers serving in all ships in home waters or in reserve, or holding appointments in shore establishments, will be regarded as if they were serving under the Commander-in-Chief, Atlantic Fleet.

Aircraft in Cruisers.—H.M.S. "Shropshire," during her refit which concluded on 14th April, was fitted with an aeroplane and catapult. The other ships of the First Cruiser Squadron are to be similarly equipped.

### Royal Naval Flying Club.

Membership of this Club has now reached 185 and the entrance fee has been raised from 10s. to 15s. The annual subscription remains at £1 10s. 0d.

Rear-Admiral A. L. Snagge, has succeeded Rear-Admiral The Hon. R. A. R. Plunkett-Ernle-Erle-Drax, C.B., D.S.O., as Chairman of the Committee on the appointment of the latter as Commander-in-Chief, America and West Indies Station.

Members are requested to furnish their permanent addresses to the Hon. Secretary, whose address is: Aldrington, 4, Bolton Crescent, Windsor, Berks.

## ROYAL MARINES

Honorary Colonel Commandants.—It was notified in Fleet Orders on 24th March, that His Majesty the King had been graciously pleased to sanction the appointment of Honorary Colonel Commandant of a Royal Marine Division being filled by an Admiral of the Fleet or Admiral on the active or retired lists, or a General Officer, Royal Marines, on the active or retired lists. Hitherto these appointments have been held only by General Officers, R.M.

On 6th April, the Admiralty announced that Admiral of the Fleet Sir Roger Keyes, Bt., G.C.B., K.C.V.O., C.M.G., D.S.O., had been appointed Honorary

Colonel Commandant of the Portsmouth Division, Royal Marines, as from 31st March, 1932. He succeeded Major-General Sir Archibald Paris, K.C.B., who had attained seventy years of age.

CHIEF CONSTABLE, R.M. POLICE.—An Order in Council published in the *London Gazette* on 22nd March, 1932, sanctioned the appointment of a Chief Constable, Royal Marine Police, with effect from 1st January, 1932. The appointment is non-pensionable, and is to be filled by a Lieutenant-Colonel or Major, Royal Marines, on the retired list. It may be held during the pleasure of the Admiralty, and is to be vacated on the holder reaching the age of sixty. The salary is £1,000 a year, standard rate, subject to variation in relation to the cost of living. An official residence is to be provided, or an allowance in lieu. Retired pay is to be suspended during the tenure of the appointment.

## ROYAL NAVAL VOLUNTEER RESERVE

EASTER CRUISE.—H.M.S. "Champion," Captain M. W. S. Boucher, D.S.O., gunnery and torpedo school cruiser at Portsmouth, made a cruise in the Channel during the Easter holiday to afford members of the London and Sussex Divisions, R.N.V.R., an opportunity to put in sea training. The vessel left Portsmouth on Good Friday for Torbay, and returned on Easter Monday.

GOOD SERVICE BADGES.—As an encouragement to keenness and efficiency in the R.N.V.R., Their Lordships have approved the institution of R.N.V.R. Good Service Badges (unpaid) for ratings under regulations announced in Fleet Orders dated 5th February. Badges not exceeding three in number may be conferred gratuitously on men of and above the rating or relative rating of able seaman. The qualifying service for one badge is four years; two badges, eight years; and three badges, twelve years.

# DOMINION NAVIES

## ROYAL AUSTRALIAN NAVY

CRUISE.—During February, the cruisers "Canberra" and "Australia" and the aircraft carrier "Albatross" were at Hobart, and were joined in the last week of the month by the destroyer "Tattoo" from Sydney. The Squadron returned to Sydney on 14th March to meet the "Diomede," flagship of the New Zealand Division. From 18th April to 3rd May, the Squadron was to be at Jervis Bay.

INTERCHANGE DEFERRED.—The periodical interchange of ships between the R.N. and R.A.N., postponed from 1930 for financial reasons, has again been deferred for similar reasons. It is hoped, the First Lord states, to resume this highly desirable practice as soon as the financial situation permits.

## ROYAL CANADIAN NAVY

CRUISE.—The "Champlain" and "Saguenay," from Halifax, were at Kingston, Jamaica, from 9th to 16th February. The "Saguenay" then left for a cruise to Havana, St. Lucia, and Barbados; and the "Champlain" left on 23rd February for St. Kitts, Antigua, and Martinique. Both vessels arrived at Trinidad on 17th March and left on the 26th for Bermuda, where they were due

to remain for a month before returning to Halifax. The "Vancouver" and "Skeena," stationed at Esquimalt, had returned there earlier from their cruise, during which they touched at Astoria, San Francisco, Magdalena Bay, Corinto, and other places.

## NEW ZEALAND DIVISION

ECONOMY REPORT.—In the report of the Commission on Naval Expenditure published on 11th March, it was recommended that negotiations be opened with the British Government to resume control of the New Zealand Division of the Royal Navy in return for a fixed annual subsidy. A reduction of the Singapore vote by £50,000 was also suggested.

"DUNEDIN'S" REFIT.—H.M.S. "Dunedin" commissioned at Chatham on 5th April for trials and for further service on the New Zealand Station after long refit.

# FOREIGN NAVIES

## FRANCE

NAVY ESTIMATES.—Estimates were passed in March for the period from 1st April to 31st December, 1932, and in future the financial year is to coincide with the calendar year. They show a total increase over those for the corresponding period of 1931 of 90,700,000 francs (£731,000 gold). The total sum asked for new construction is 1,730,000,000 francs (£13,900,000 gold).

The following summary of new construction is given by the Paris Correspondent of *The Times*:—

UNDERGOING TRIALS.—One first-class cruiser, one aircraft-tender (the "Commandant Teste"), three flotilla leaders, one despatch vessel, eight first-class submarines, one long range submarine, one minelaying submarine, and one submarine depot-ship.

LAUNCHED AND COMPLETING.—One first-class cruiser, one second-class cruiser, ten flotilla leaders, five despatch vessels, seven first-class submarines, one minelaying submarine.

BUILDING.—Two second-class cruisers, four flotilla leaders, eight first-class submarines, one netlayer, one minelaying submarine.

PROJECTED.—One battle-cruiser, one despatch vessel, four escort vessels.

NEW BATTLE CRUISER.—On 28th January, it was reported that plans for the projected battle-cruiser had been approved by the Naval Committee of the Chamber. The plans provide for a ship of 26,500 tons, carrying eight 13-in. guns, with improved anti-aircraft and anti-submarine defences, and with a maximum speed of 29 knots. The cost will be 580,000,000 francs (£4,800,000 at par).

FLOTILLA LEADER LAUNCHED.—On 21st March, at La Seyne, a new flotilla leader, "Le Chevalier Paul," was launched. She belongs to a group of twelve, of 2,441 tons displacement—the heaviest flotilla leaders yet built for any navy. Engines of 74,000 horse-power give them a designed speed of 37 knots, and the armament includes five 5.5-in. guns.

NEW ENTRY OF OFFICERS.—There are eighty-four vacancies at the Naval School for the year 1932, seventy for the Navy proper and fourteen for the Naval

Air Service. Aviation is, however, now included in the curriculum of the School, and in future a naval officer may be detached to perform any aviation duties required of him by the Ministry of Marine.

NAVAL MANŒUVRES.—Important manœuvres in the Mediterranean are to be held by the combined French fleets this Summer. Admiral Robert will be in command. The forces will include all the newest ships and Naval Air units. Casablanca will be used as the main base. The fleet will be reviewed by the President of the Republic at Toulon on 14th July.

SOUND FILMS FOR INSTRUCTION.—A sound film is being produced to illustrate the life and work of the Engineering School at Toulon. It will show technical details of the classes in the workshops, naval training and recreation at the School.

## GREECE

DESTROYER LAUNCHED.—The destroyer " Spetsai " has been launched by the Odero firm at Genoa. She is one of four vessels ordered in October, 1929, of 1,350 tons, 50,000 horse-power, 39 knots speed, and an armament of four 4.7-in. guns.

## ITALY

NEW BUILDING PROGRAMME.—The 1931-32 building programme comprises two 6,500-ton cruisers and two 625-ton destroyers. The cruisers will be very similar to the " Attendolo " class of 5,550 tons displacement, mounting eight 6-in. and six 3.9-in. A.A. guns, with a designed speed of 37 knots.

CRUISERS COMPLETING.—With the launch of the " Pola " by the Orlando firm on 4th December, 1931, all the 10,000-ton cruisers for the Italian Navy are in the water. They number seven, of which the " Trento " and " Trieste " were completed in 1929, and the " Zara " and " Fiume " in 1931. The " Bolzano," " Gorizia " and " Pola " were launched in 1930-31, and are completing afloat. The first two should be ready in 1932 and the " Pola " in 1933.

In addition to these 10,000-ton 8-in. gun ships, eight cruisers of about 5,000 tons, armed with 6-in. guns, are built or building.

DETAILS OF THE " POLA."—Reports in the Italian press give the following details of the 10,000-ton cruiser " Pola." The ship is specially protected against under-water attack by well-arranged compartments ; the engines and boilers are in seven watertight compartments ; the former consist of two groups of Parson's turbines with reduction gearing, and the eight latter are Yarrow type, oil fired. The shaft horse power of two shafts is 95,000, with a boiler pressure of 375 lbs. per square inch and a super-heat of 70° centigrade. The designed speed is 32 knots.

Anti-gas protection is fitted to all the fighting stations. Internally the ship is reported to be well equipped. The galleys are oil fired, there is a steam laundry, additional sick bay for contagious diseases, mechanical steam-heating and ventilation systems. There is a small hangar which can accommodate three seaplanes which, by means of a lift, are brought up in line with the rails of the Cagnotto type catapult.

DESTROYER LAUNCHED.—The destroyer " Saetta " was launched at Genoa in February. She is one of the " Dardo " class of eight which was laid down in 1929, with a displacement of 1,200 tons, 38 knots speed, and an armament of four 4.7-in. guns, four smaller anti-aircraft guns, and six torpedo tubes.

## UNITED STATES

POLICY BILL.—The " Vinson " Bill, alluded to in last quarter's Notes, seems likely to be superseded by the " Hale " Bill. This latter is also designed to ensure the adoption of the policy of building up to the full strength permitted by the London Naval Treaty, but as it does not require the laying down of any specified number of ships, and therefore does not imply any immediate appropriation of funds, it is more likely to be passed than the earlier measure.

CRUISER CONSTRUCTION.—The 10,000-ton cruiser " Portland " was launched at the Fore River yard of the Bethlehem Shipbuilding Corporation on 19th March. This is the second cruiser to be launched of the fifteen authorised by Congress on 13th February, 1929. Under the terms of the London Naval Treaty, not more than ten of these fifteen ships can be laid down prior to 31st December, 1936. The first ship to be launched was the " Indianopolis " (see these Notes for February, 1932). These two ships were laid down in 1930, as was the third vessel, the " Astoria." They are of 10,000 tons, 107,000 horse-power, 32¼ knots speed, and will be armed with nine 8-in., eight 5-in. A.A., and ten small guns.

NEW CRUISER FLAGSHIP.—On 23rd February, the 7,000-ton cruiser " Memphis," completed in 1925, relieved the old cruiser " Rochester " as flagship of the Special Service Squadron at Balboa. The " Rochester," completed in 1893, and the oldest of the United States cruisers, was ordered to join the Asiatic Fleet, proceeding via San Diego, Honolulu and Guam.

TRAINING OF RESERVE OFFICERS.—It was announced in March that the Navy Department had decided upon a scheme of correspondence courses for the training of officers of the Naval Reserve. Hitherto these officers have been trained during cruises with the fleet, and in shore armouries, with a correspondence course in navigation. Under the new scheme, there will be courses in seamanship, international law, tactics for convoys, communications for convoys, naval regulations and customs, anti-aircraft and anti-submarine gunnery, engineering, ordnance, general naval knowledge, and others. The courses are to be selected and co-ordinated by the Director of the Naval Reserve. Four " Educational Centres " are being set up in New York, Washington, New Orleans and San Francisco, each under a Commander, and each provided with an assembly room and library. At first, the courses will be entirely optional, but if the scheme proves a success, it is hoped to make the completion of correspondence work a qualification for promotion.

## YUGOSLAVIA

FLOTILLA LEADER COMPLETED.—In the week ending 12th March, the flotilla leader " Dubrovnik," built for the Royal Yugoslav Navy by Yarrow & Co., Ltd., completed a series of trials on the Clyde. The " Dubrovnik " is the largest vessel of her type ever constructed in this country. Under the London Treaty, Great Britain, the United States and Japan agreed not to build flotilla leaders of more than 1,850 tons, or with guns exceeding 5.1-in. calibre. The " Dubrovnik " is of 2,400 tons, and armed with four 5.5-in. guns.

# ARMY NOTES

## HOME

### ROYAL UNITED SERVICE INSTITUTION.

A letter has been addressed by the War Office to all Commands at Home and Abroad circularising the notice of the suspension of the entrance fee for membership of the Institution, and enumerating the facilities afforded to officers for professional study. General Officers Commanding have been asked to bring this to the notice of Regular and Territorial Army Officers in their commands.

### EXTRACTS FROM THE MEMORANDUM OF THE SECRETARY OF STATE FOR WAR RELATING TO THE ARMY ESTIMATES FOR 1932.

The Army Estimates for 1932, which amount to £36,488,000 net, or £3,442,000 less than the sum voted in 1931, have been materially affected by the special measures taken by H.M. Government to secure reductions in national expenditure.

This reduction has only been achieved with the greatest difficulty by resorting to a drastic suspension or retardation of many services which are essential to the well-being and efficiency of the Army. The principal further saving has been obtained by the cancellation of the annual training in camp of the Territorial Army and the Supplementary Reserve, while the field training of the Regular Army has been curtailed. While the strength of the Army remains practically unaltered, savings of a continuing character (always subject to the question of future prices) have been effected to the extent of nearly £2,000,000, while the temporary reductions amount to approximately £1,500,000.

It will be observed that of the total Army Estimates no less a sum than £8,300,000 is hypothecated for non-effective charges which are not susceptible of direct reduction, and have indeed grown steadily in recent years. All that is available for effective services is now some £28,000,000, representing a reduction of over £8,000,000 since 1925.

In these circumstances it is clear that the special effort which has been made in 1932 cannot be maintained in future years. It has only been rendered possible either by measures involving a definite and obvious loss of military efficiency or by the postponement of services which, by the very fact of delay, will ultimately become more expensive to carry out.

The subjoined table gives some figures since 1922 :—

| *Year* | *Effective charges* | *Non-effective charges* | *War terminal charges* | *Total* |
|---|---|---|---|---|
| | £ | £ | £ | £ |
| 1922 .. .. | 46,631,050 | 8,668,950 | 7,000,000 | 62,300,000 |
| 1925 .. .. | 36,248,300 | 7,866,100 | 385,600 | 44,500,000 |
| 1930 .. .. | 32,119,670 | 8,383,000 | *Cr.* 2,670 | 40,500,000 |
| 1931 .. .. | 31,528,350 | 8,750,000 | *Cr.* 348,350 | 39,930,000 |
| 1932 .. .. | 28,172,060 | 8,306,000 | 9,940 | 36,488,000 |

ESTABLISHMENT AND DISTRIBUTION OF THE REGULAR ARMY.—The total of Vote A is 148,700 as compared with 148,800 in 1931.

The distribution of the Army at Home and Abroad has not been altered in any material way. Two battalions are retained temporarily in Palestine, the normal infantry garrison of Malta being correspondingly reduced. Since the Estimates were framed, events in Shanghai have necessitated the temporary augmentation of the small British force in that city.

STRENGTH AND RECRUITING.—The strength of the British Army, inclusive of British troops in India, was, on 1st April, approximately 8,000 below establishment, excluding some 2,000 men from overseas in process of transfer to the Reserve and discharge. As the strength of the British troops in India is nearly up to establishment, the shortage will fall on the Army at home, mainly in the Infantry of the Line. During the year the outflow will be approximately 2,000 less than the anticipated intake of recruits.

ARMY AND SUPPLEMENTARY RESERVES.—The strength of the Army Reserve is 125,500 and at the end of the year should be approximately the same. Re-engagement for Section D for the Infantry of the Line was re-opened on 1st April, 1931, until August, 1931, when re-engagement for Section D was suspended for the Household Cavalry, the Cavalry of the Line, the Royal Artillery and the Infantry. It is not proposed to re-open re-engagement in any of these arms during the coming year.

Recruiting for the Supplementary Reserve during the past year did not come up to expectations. The strength should rise from about 19,000 on 1st April to 20,000 at the end of the year.

VOCATIONAL TRAINING AND EDUCATION.—2,429 soldiers received training during the year ended 31st December, 1931; of these, 1,831, or 75.3 per cent., secured employment, 1,401, or 57.6 per cent., immediately on completion of their training. The corresponding figures for 1929 and 1930 were 2,193 and 76 per cent., and 1,991 and 69.4 respectively.

Educational training in the Army continues to make satisfactory progress. It is interesting to note that whereas the number of candidates presenting themselves for the First Class and Special Certificates in 1921 was 121, the corresponding figure in October, 1931, was 5,462; these certificates are comparable with the school certificate and with matriculation for a university, respectively.

HEALTH OF THE ARMY.—The health of the Army throughout the year continued to be good, and except for a high incidence of influenza during the early months, when the civil community was similarly affected, there has been no undue prevalence of disease. Beyond a temporary increase of some 1,800 beds during the prevalence of influenza, there was little change in the number of equipped hospital beds.

There are now over 25,000 enrolled and efficient members of Voluntary Aid Detachments, of whom 5,500 have signed a " mobile " obligation for general service in an emergency.

DISCIPLINE.—The high standard of discipline in the Army has been well maintained; the number of courts-martial has again fallen, fewer men have been under sentence of imprisonment or detention or have been discharged for misconduct, and courts-martial for drunkenness show a progressive decline.

TERRITORIAL ARMY.—The strength of the Territorial Army (exclusive of Permanent Staff) on 1st January, 1932, was 6,928 officers and 127,788 other ranks, an increase of 144 officers and 506 other ranks, as compared with 1st January, 1931. The number of recruits in 1931 was 30,142 against 28,571 in the previous year, an

increase of 1,571. Camp was attended in 1931 by 6,045 officers and 115,890 other ranks (exclusive of Permanent Staff); the corresponding figures for the previous year were 5,913 officers and 111,667 other ranks.

In view of the necessity of effecting specially large reductions in the Estimates for 1932, the Army Council decided with great regret that the annual camp trainings of the Territorial Army and the Supplementary Reserve (Categories A and B) should not take place and a saving of approximately £1,000,000 has thereby been secured. As a set-off against the loss of training in annual camp, a sum of £50,000 has been added to the normal training grant allotted to General Officers Commanding-in-Chief (making a total of £194,000) in order that additional training may be arranged.

Experience of the first year's working of the supply of War Department six-wheeled lorries to Territorial Army Artillery (Field and Medium) shows that the scheme is working well and has been accepted by Territorial Army units with enthusiasm. A re-organization of the regular cavalry has made a number of light six-wheeled lorries surplus to Army requirements and it has been decided to make use of these in order to accelerate the completion of the programme in 1932.

Divisional Trains, Royal Army Service Corps, and Field Ambulances, Royal Army Medical Corps, are gradually to be put on a mechanized basis and new establishments will shortly be issued.

The policy of close co-operation between the Regular and Territorial Armies was fully maintained in 1931, and although it has been found necessary to cancel the usual camps, the year will be regarded as one of preparation for the resumption of field training in 1933. Assistance will continue to be given by the Regular Army, especially in regard to the training of leaders and specialists, while additional courses at army schools will be made available for officers and other ranks of the Territorial Army who may be able to attend.

Since the war, no co-ordinated organization has existed for the coast defences of Great Britain. Parties of regular Royal Artillery and Royal Engineers have been stationed at the ports mainly for care and maintenance duties, and side by side with them have existed a number of Territorial Army units, Royal Artillery and Royal Engineers, trained in coast defence duties and allotted to the various ports. It has now been decided to entrust to the Territorial Army the entire responsibility for manning these coast defences, and to reorganize the Territorial Army units so as to bring them into proper relation with the existing sea front armament and lights, and to provide new units necessary for anti-aircraft protection. All regulars will be removed from coast defences except (*a*) certain Royal Artillery specialists who will be retained in order to operate the more difficult range-finding instruments, to assist the Territorial Army, and to look after the armament; (*b*) a regular fortress company, Royal Engineers, at Portsmouth, to which a section of the coast defence lights will be allotted; and (*c*) a number of surplus Royal Engineers who are to be retained temporarily in certain ports instead of civilians who would otherwise be required for care and maintenance duties, pending a decision as to their ultimate disposal.

The Territorial Army coast defence establishments will, like the London Air Defence units, be on a full war scale, but it is not necessary to recruit them up to full establishment at present.

Officers Training Corps.—In common with the rest of the Army the Officers' Training Corps has had to suffer from the necessity for economy, the cancellation

of camps for the Junior Division in 1931 on medical grounds being followed by the withdrawal of the usual financial assistance towards camps in 1932.

A scheme has been introduced for the formation of an Officer Cadet Reserve and members of the Senior Division of the Officers Training Corps will be invited to register their names as having the intention, in the event of war, of offering themselves, if holding Certificate "B," for immediate commission, or if holding Certificate "A," for enlistment for training as officers. Registration on the roll is purely voluntary and officer cadets will be entitled and expected to apply at any time for the removal of their names from the register, temporarily or permanently, should circumstances arise which would prevent them from offering their services if the emergency were to arise.

CADET UNITS.—H.M. Government have decided that the Cadet movement should again be officially recognized as it was before 31st October, 1930; the payment of grants from public funds will not, however, be resumed, and no expense to Army Funds will be incurred as a result of the various concessions now made.

Camp equipment for a maximum of 25,000 Cadets for a fortnight each year will be made available, a charge being levied to cover the cost of handling at Ordnance Depots, depreciation, etc., and payment being made for the carriage of the equipment, and to make good any losses. Units will be permitted to use War Department and Territorial Army lands, buildings, ranges, etc.

TRAINING.—Valuable experience was gained in 1931 in the organization and handling of tank units and formations, as the result of the assembly of three battalions of the Royal Tank Corps for special training on Salisbury Plain. This experiment will be repeated during 1932.

The 6th and 7th Infantry Brigades will be retained on an experimental basis. It is not proposed to hold any divisional concentrations during the current year, and formations will train in the vicinity of their peace stations up to and including brigade training.

It has been decided that regular artillery (other than anti-aircraft artillery) will, in future, carry out practice camp biennially.

WORKS SERVICES.—The sudden call for exceptional economies has had the regrettable consequence of seriously retarding the execution of barrack services. Many barracks are of great age, and huts have so far deteriorated as to be very costly to keep habitable.

There are also very considerable arrears to be overtaken and increased provision will need to be made at the earliest possible opportunity.

ARMAMENTS AND RESEARCH.—The mechanization of field engineer units has begun, and power plant of modern types is being provided to increase the output of work in the field where, hitherto, manual labour alone has been considered possible.

In the sphere of mechanically propelled vehicles the most interesting feature of the past year has been the success which attended the trials in the hands of the troops of a new light field artillery tractor, which being small and inconspicuous is a marked improvement on previous types. Included in the Estimates for 1932 is a sum sufficient to equip one field artillery brigade with these new vehicles. The increasing difficulty of obtaining an adequate supply of light draught horses makes the provision of suitable artillery tractors a matter of great importance.

### Appointments and Promotions.

H.M. the King has approved of the following appointments :—Colonel (temporary Brigadier) A. P. Wavell, C.M.G., M.C., as Aide-de-Camp to the King, in succession to Brigadier F. H. Stapleton, C.M.G., retired ; Colonel H. D. Goldsmith, D.S.O., and Colonel the Hon. C. M. Hore-Ruthven, C.M.G., D.S.O., as Aides-de-Camp to the King, in succession to Colonel (temporary Brigadier) J. K. Dick-Cunnyngham, C.M.G., D.S.O., and Colonel (temporary Brigadier) J. R. M. Minshull-Ford, D.S.O., M.C., promoted Major-Generals ; Colonel P. L. Hanbury, C.M.G., D.S.O., in succession to Colonel W. J. N. Cooke-Collis, C.B., C.M.G., D.S.O., promoted Major-General ; Colonel (temporary Brigadier) M. Saunders, D.S.O., Indian Army, in succession to Colonel (temporary Brigadier) E. D. Giles, C.M.G., D.S.O., Indian Army, promoted Major-General.

Colonel A. C. H. Gray, O.B.E., M.B., as Honorary Surgeon to the King, in succession to Colonel G. De la Cour, O.B.E., M.B., retired ; Lieutenant-Colonel and Brevet Colonel P. H. Mitchiner, T.D., M.D., F.R.C.S., Royal Army Medical Corps (Territorial Army), as Honorary Surgeon to the King, in succession to Colonel R. E. Bickerton, D.S.O., T.D., M.B., Territorial Army, retired.

The following officers to be Colonels Commandant, Royal Artillery :—Lieutenant-General Sir T. A. Cubitt, K.C.B., C.M.G., D.S.O., Major-General Sir C. C. Van Straubenzee, K.B.E., C.B., C.M.G., retired pay, and Lieutenant-General Sir W. E. Ironside, K.C.B., C.M.G., D.S.O., in succession to the late Major-General R. A. Montgomery, C.B., C.V.O., Major-General Sir J. K. Trotter, K.C.B., C.M.G., retired pay, who has resigned the appointment, and Major-General Sir R. A. K. Montgomery, K.C.M.G., C.B., D.S.O., retired pay, who has attained the age limit for the appointment.

Colonel (honorary Brigadier-General) A. Courage, D.S.O., M.C., retired pay, as Colonel of the 15th/19th Hussars, in succession to the late General Sir W. E. Peyton, K.C.B., K.C.V.O., D.S.O.

The following appointments have been announced :—Major-General G. H. Addison, C.M.G., D.S.O., to be Engineer-in-Chief, Army Headquarters, India, in succession to Major-General A. G. Stevenson, C.B., C.M.G., D.S.O. ; Major-General G. A. Weir, C.B., C.M.G., D.S.O., to be Commander, 55th (West Lancashire) Division, Territorial Army, with effect from 14th September, 1932, in succession to Major-General H. W. Higginson, C.B., D.S.O., whose tenure of the appointment expires on that date.

Major-General A. B. E. Cator, C.B., D.S.O., has assumed command of the London District, in succession to Major-General Sir C. E. Corkran, K.C.V.O., C.B., C.M.G.

The following Promotions have been made : Major-General B. R. Kirwan, C.B., C.M.G., to be Lieutenant-General ; Colonel (temporary Brigadier) J. R. M. Minshull-Ford, D.S.O., M.C., A.D.C. ; Colonel W. J. N. Cooke-Collis, C.B., C.M.G., D.S.O., A.D.C., to be Major-Generals.

### Miscellaneous.

Cavalry Reorganization.—Provisional peace establishments recently issued institute a reorganization of the Cavalry regiment. The former peace establishment allowed for a regimental headquarters, a machine-gun squadron and two (four troop) sabre squadrons. In the machine-gun squadron there were two troops, each consisting of two sections, each of two machine guns, making a total of eight machine guns in the squadron. The regiment is now to consist of a regimental

headquarters and three sabre squadrons, the machine gun squadron thus disappearing. In the regimental headquarters there are four groups, one of which is the machine gun group with four Vickers guns. Instead of being carried on a six-wheeler, these guns are now carried on pack; there is thus a reduction of four machine guns. Further, the sabre squadrons now consist of three troops instead of four. A new feature of regimental headquarters is an Austin scout group with nine cars.

Trials are being made with a new light machine gun. If this should turn out to be successful it is proposed eventually to equip each of the sabre squadrons with one of these guns, and also to replace the machine guns in the machine-gun group with it. All machine guns in the regiment will be carried on pack.

ROYAL ARTILLERY—NOMENCLATURE AND ORGANIZATION.—Indian Mountain Brigades, Royal Artillery, and Indian Mountain Batteries, Royal Artillery, shall in future be designated Mountain Brigades, Royal Artillery, and Mountain Batteries, Royal Artillery.

THE ARMY MOTOR CONVOY'S TOUR.—The convoy which is making an experimental tour in Egypt and the Sudan, and is on its way back to Cairo, arrived at Kosseir (on the Red Sea coast of Egypt) on 11th April. No mechanical defects have occurred in any of the vehicles, and the *personnel* are all well.

A report on the 550-mile journey from Malakal (on the White Nile) to Makwar (on the Blue Nile, near Sennar), covered in five stages between 18th and 24th March, has been received by the War Office. The journey from Malakal to Jegu (337 miles) provided by far the most severe test of suspension and strength of construction of the vehicles yet encountered. The greater part of this route has only twice previously been traversed by motor cars and never before by lorries. The track is for the most part cotton soil, cracked by the sun, very bumpy, and full of holes. For one stretch of twenty-one miles elephants had used the track in wet weather, and their footprints had hardened into deep potholes. Farther on the track ran for a time across grassy plains, and then wound like a corkscrew through dense forest.

The vehicles all ran well during the whole 550 miles, and, apart from the breakage of one or two spring leaves, no mechanical troubles were experienced. During a part of the journey temperatures of 107 degrees in the shade were recorded, but no boiling of the cooling water occurred.—[*The Times*, 15th April, 1932.]

FUTURE OF THE ROYAL ARMY CLOTHING DEPARTMENT.—It has been decided in the interests of economy to obtain in future the requirements of clothing and necessaries for the Army, with the possible exception of full dress, from the trade, and to discontinue manufacture at the Royal Army Clothing Factory, Pimlico. Steps will accordingly be taken to close down the Factory. Consequent upon this decision, future requirements of clothing are being obtained by contract from the outside trade, with the exception of a limited quantity of work which has been retained for the Factory in order that workers whose discharge is entailed by the closing of the Factory may have as long a period of notice as possible. The future method of obtaining full dress clothing for the Army is at present under review.

The premises held at Pimlico, on lease, will be evacuated, and the Clothing Depot and Inspectorate, which are in addition to the Factory situated at Pimlico, will be located at Didcot, where accommodation on War Department premises can be made available. It is recognised with great regret that these changes will involve the discharge of workers both male and female now employed both at the

Factory and the Depot. The amount of work remaining available for the Factory is limited, and it is estimated will be completed by about the middle of 1932, but it will be necessary to effect the discharge of individuals as and when the work available for them runs out. Similar considerations apply to the Depot, the establishment of which at Didcot will be effected by degrees and will be completed some time in 1933.

*Note.*—The Clothing Factory was established in 1855 as the outcome of the changes following on the Crimean War. Up to that time the clothing of regiments had been in the hands of their colonels. It is understood that the lease of the Factory would expire in 1937, and that it could not then be renewed. Compensation has been received by the War Office for its evacuation before that date. The stock of full dress uniforms still on hand in the Factory will probably be sold.

ROYAL ARMY CHAPLAINS' DEPARTMENT: ADDITIONAL CHAPLAIN COMMANDANT. H.M. the King has approved of the appointment of a second Chaplain Commandant of the Royal Army Chaplains' Department, and of the appointment of the Rev. W. S. Jaffray, C.M.G., C.B.E., D.D., Honorary Chaplain to the King, as the first incumbent of the office.

The first appointment of Chaplain Commandant of the Royal Army Chaplains' Department was created in February, 1930, and the status and duties of the appointment correspond with those of Colonels Commandant of other Corps.

MEDALS FOR VOLUNTARY NURSING ORGANIZATIONS.—H.M. the King has approved of the institution of a medal to recognize long and efficient service of members of voluntary and auxiliary medical, nursing and ambulance organizations. The medal, to be known as " The Voluntary Medical Service Medal," will be issued by the St. Andrew's Ambulance Association and the British Red Cross Society to their members under conditions, as to efficiency, etc., equivalent to those laid down for the award of the existing Service Medal of the Order of St. John of Jerusalem, and like that Medal will be permitted to be worn in uniform on the left breast. The Medal of the Order of St. John will continue to be awarded by the Order of St. John of Jerusalem, whose members will not be eligible for the new medal.

To qualify for the new medal, members of the St. Andrew's Ambulance Association and the British Red Cross Society must render fifteen years' active efficient service; a clasp, bearing the St. Andrew's Cross or the Geneva Cross on a plain background, will be granted for each successive five years' additional service. The Medal will be of silver and the design will consist, on the obverse, of a bust symbolic of Florence Nightingale and, on the reverse, of the Geneva Cross and the Cross of St. Andrew, with the words " Long and Efficient Service." The riband will be red with broad yellow stripes $\frac{1}{8}$ inch from the edges and a narrow white stripe down the centre of the riband. Silver tokens, up to a maximum of two, will be worn on the riband in undress uniform to denote the award of clasps.

The new medal will take precedence after the Badge of the Order of Mercy in the official list showing the order in which Orders, Decorations and Medals shall be worn.

The King has also approved of a mark of distinction being instituted to recognize the service of members of the Voluntary Aid Detachments and of the Military Hospitals Reserve. This will take the form of a silver bar-brooch superscribed " V.A.D." and " M.H.R." respectively, and surmounted by the Royal Crown. It will be awarded to individuals who complete twelve years' active and efficient service as mobile members of Voluntary Aid Detachments, or as members of the

Military Hospitals Reserve. It will be worn by recipients in possession of the Service Medal of the Order of St. John, or the Voluntary Medical Service Medal granted for service with the St. Andrew's Ambulance Association or the British Red Cross Society at the top of the riband suspending the medal. Recipients not in possession of either of these medals will wear the bar-brooch on the left breast below any medals or decorations.

A clasp, bearing the Royal Crown upon a plain background, will be granted for each further period of six years' qualifying service and will be worn on the riband of the medals.

When in undress uniform a recipient of a bar-brooch and one of the above medals will wear on the riband of the medal a token, in silver, bearing the appropriate letters " V.A.D." or " M.H.R."

## TERRITORIAL ARMY

CHANGE IN DESIGNATION.—H.M. the King has approved of the designation of the Inns of Court Officers' Training Corps being changed to The Inns of Court Regiment.

## DOMINION FORCES

REGIMENTAL ALLIANCES.—H.M. the King has approved of the following alliances :—

The Manawatu Mounted Rifles of New Zealand to the 5th Inniskilling Dragoon Guards.

18th Medium Battery, New Zealand Artillery, New Zealand Military Forces, and 18th Medium Battery, Royal Artillery.

20th Light Battery, New Zealand Artillery, New Zealand Military Forces, and 20th Light Battery, Royal Artillery.

The Westminster Regiment, Non-Permanent Active Militia of Canada, to The Royal Warwickshire Regiment.

6th Infantry (Duke of Connaught and Strathearn's Own Capetown Highlanders), Active Citizen Force, Union Defence Forces, to The Gordon Highlanders.

## INDIAN ARMY

APPOINTMENT.—Major-General R. C. Wilson, C.B., D.S.O., M.C., I.A., *p.s.c.*, has been appointed Colonel of the 5th/5th Mahratta Light Infantry, in succession to Lieutenant-General Sir Walter S. Delamain, K.C.B., K.C.M.G., D.S.O., I.A. (retired), deceased.

DISBANDMENT AND REDUCTION.—Owing to the need for retrenchment, the 4th Battalion, 1st Punjab Regiment, has been disbanded. The Multan Brigade has been reduced, and the area which it hitherto controlled will in future be in charge of the Ferozepore Brigade.

INDIAN MILITARY CADET COLLEGE.—A committee of experts has worked out the details of the establishment of the Indian Military Cadet College, which is now to open in order to train Indian cadets to officer a complete Indian Division. On passing out cadets will receive the King's Indian commission. The *personnel* of the College will be accommodated in the old Railway Staff College at Dehra Dun. The first cadets will join in October. The building will house sixty-four students. The official name of the new College will be the Indian Military Academy. All

*personnel* of the Regular Indian Army will be eligible for nomination to the Academy as Indian Army cadets, if they satisfy the conditions now laid down.

Colonel L. P. Collins, D.S.O., O.B.E., Indian Army, has been selected as the first Commandant of the new Indian Military Cadet College.

## FOREIGN

(*Published with permission of the General Staff*).

### FRANCE

CONSEIL SUPERIEUR DE LA GUERRE.—The *Conseil Supérieur de la Guerre* consists of the marshals of France and 12 to 14 senior generals, with the Minister for War as President. The Vice-President is the Commander-in-Chief designate for war, and most other members are commanders designate of armies or groups of armies. Each member has a senior officer as his chief staff officer and one or more other staff officers ; these form the nucleus of his staff for war.

Members who are appointed as inspectors of arms, etc., report to the Vice-President and not to the Council as a whole.

The Vice-President receives his orders as to the country's policy from the Government, and under his instructions the General Staff draw up appreciations, plans, etc. He is solely responsible for the plan adopted ; he may discuss it with the Council, but they have no collective responsibility for it.

If plans involve the co-operation of other services, they would probably be discussed unofficially through the staffs of the services concerned, but there is no existing machinery for such consultations. The ministers, each backed by his senior service representative, in the case of the army the Vice-President of the Council, would then meet to discuss the plan officially. Should they fail to come to agreement, the matter would be referred to the *Conseil Supérieur de la Défense Nationale*, which is practically the Cabinet, certain minor ministers being omitted.

When an important overseas operation is contemplated *ad hoc* committees to ensure co-operation between the services might be appointed.

In the case of a war or an expedition based on one of the colonies, the plan would in the first instance be drawn up by the local commander-in-chief and submitted to the Minister of the Colonies. The latter has a military section in his ministry, and touch with the *Conseil Supérieur de la Guerre* is maintained through the member of that body who is appointed Inspector of Colonial Troops—at present General Claudel.

If such a war took on a really serious nature, the Inspector of Colonial Troops might possibly be appointed as Commander-in-Chief, and eventually the control and administration of the war might be handed over from the Ministry of Colonies to that of War. This had to be done in 1925-26 when the Ministry of War took over from the local administration the direct control of the Morocco campaign.

### ITALY

OPERATIONS IN CYRENAICA.—It seems as though the resistance of the surviving Senussi insurgents in Cyrenaica has finally broken down, and defections on a large scale are reported as a consequence of their recent defeat. On 11th December the three chieftains, Jusuf Rahil, Abdul Hamid El Abbar and Osman Sciami, together with about 100 armed men, attempted to break through the Italian

cordon on the Egyptian-Cyrenaica frontier. Abdul Hamid succeeded in escaping, but his fellow chieftains were prevented from so doing and suffered heavy losses. Five days later Osman Sciami surrendered to the Italian authorities near Derna. On 19th December Jusuf Rahil and three other men were overtaken by Italian troops and, on their offering resistance, were shot down.

General Graziani, Lieutenant-Governor of the colony, in an Order of the Day states that " Only a few handfuls of men made to choose between surrender or death are still offering resistance in the hinterland." He estimates that during the last 12 months 53 major and 210 minor engagements have been fought, in which 1,602 rebels have been killed. Four guns, 3 machine guns and about 1,000 rifles have been captured, and large numbers of camels, sheep and horses have been confiscated. The Italian losses have amounted to 3 officers and 132 other ranks killed, and 6 officers and 257 other ranks wounded.

## MOROCCO

French Operations During the Winter.—Operations were continued successfully with very little fighting. The Marrakech forces advancing from Imiter, composed of six battalions, a squadron of *spahis*, one brigade of mountain artillery, a battery of motorised 75-mm. guns, two squadrons of armoured cars, and a squadron of aircraft, occupied some 12 miles of the Todra valley at its junction with the Imiter valley.

The eastern forces consisted of eight to ten battalions with artillery, armoured cars and aircraft, and operated in four columns. A northern flank guard of two battalions, with a battery and two troops of armoured cars, advanced from Mzizel to Agoudim and pushed on through Semgat to Amsed. Columns from Ksar-es-Souk and Tarda have occupied Tadiroust and Guelmina respectively. Slight opposition was encountered at Tadiroust, where auxiliaries had an engagement with tribes from the southern slopes of the Grand Atlas, but were repulsed with heavy losses. The French losses were two French officers and eight other ranks killed, and six other ranks wounded. A southern column from Guelifat moved up the Gheris valley and reached its junction with the Ferkla at Touroug. So far, 6,500 tribal families have submitted.

These operations, when completed by the establishment of posts, will close in the Ait-Atta, a troublesome nomadic tribe who live in the Sarro region, and will also cut off the main area of dissidence in the Great Atlas from communication with the south.

Meanwhile, the operations in the Todra and Gheris valleys have apparently ceased, and the construction of posts to consolidate the area occupied is being carried out. The northern flank guard has now been withdrawn to Mzizel. The force sent down the Dra has reached Amzrou where it is constructing a post.

On 15th January, 1932, the French occupied the very important oasis of Tafilalet, which has been the refuge of dissidents from the mountainous regions and of the raiding bands from the Sahara. Large forces of regular troops were concentrated on three sides of the oasis and bodies of auxiliary troops were pushed in. There was apparently not much fighting except around the citadel of Bel-Kacem N'Agid, the principal chief, who finally escaped westwards with a small party. He was pursued by cavalry and his chief lieutenant and a number of his rearguard were killed, and all his lieutenants have since been captured. A road is now being pushed through the oasis from north to south and is to link up

*personnel* of the Regular Indian Army will be eligible for nomination to the Academy as Indian Army cadets, if they satisfy the conditions now laid down.

Colonel L. P. Collins, D.S.O., O.B.E., Indian Army, has been selected as the first Commandant of the new Indian Military Cadet College.

## FOREIGN

*(Published with permission of the General Staff).*

### FRANCE

Conseil Superieur de la Guerre.—The *Conseil Supérieur de la Guerre* consists of the marshals of France and 12 to 14 senior generals, with the Minister for War as President. The Vice-President is the Commander-in-Chief designate for war, and most other members are commanders designate of armies or groups of armies. Each member has a senior officer as his chief staff officer and one or more other staff officers; these form the nucleus of his staff for war.

Members who are appointed as inspectors of arms, etc., report to the Vice-President and not to the Council as a whole.

The Vice-President receives his orders as to the country's policy from the Government, and under his instructions the General Staff draw up appreciations, plans, etc. He is solely responsible for the plan adopted; he may discuss it with the Council, but they have no collective responsibility for it.

If plans involve the co-operation of other services, they would probably be discussed unofficially through the staffs of the services concerned, but there is no existing machinery for such consultations. The ministers, each backed by his senior service representative, in the case of the army the Vice-President of the Council, would then meet to discuss the plan officially. Should they fail to come to agreement, the matter would be referred to the *Conseil Supérieur de la Défense Nationale*, which is practically the Cabinet, certain minor ministers being omitted.

When an important overseas operation is contemplated *ad hoc* committees to ensure co-operation between the services might be appointed.

In the case of a war or an expedition based on one of the colonies, the plan would in the first instance be drawn up by the local commander-in-chief and submitted to the Minister of the Colonies. The latter has a military section in his ministry, and touch with the *Conseil Supérieur de la Guerre* is maintained through the member of that body who is appointed Inspector of Colonial Troops—at present General Claudel.

If such a war took on a really serious nature, the Inspector of Colonial Troops might possibly be appointed as Commander-in-Chief, and eventually the control and administration of the war might be handed over from the Ministry of Colonies to that of War. This had to be done in 1925-26 when the Ministry of War took over from the local administration the direct control of the Morocco campaign.

### ITALY

Operations in Cyrenaica.—It seems as though the resistance of the surviving Senussi insurgents in Cyrenaica has finally broken down, and defections on a large scale are reported as a consequence of their recent defeat. On 11th December the three chieftains, Jusuf Rahil, Abdul Hamid El Abbar and Osman Sciami, together with about 100 armed men, attempted to break through the Italian

cordon on the Egyptian-Cyrenaica frontier. Abdul Hamid succeeded in escaping, but his fellow chieftains were prevented from so doing and suffered heavy losses. Five days later Osman Sciami surrendered to the Italian authorities near Derna. On 19th December Jusuf Rahil and three other men were overtaken by Italian troops and, on their offering resistance, were shot down.

General Graziani, Lieutenant-Governor of the colony, in an Order of the Day states that " Only a few handfuls of men made to choose between surrender or death are still offering resistance in the hinterland." He estimates that during the last 12 months 53 major and 210 minor engagements have been fought, in which 1,602 rebels have been killed. Four guns, 3 machine guns and about 1,000 rifles have been captured, and large numbers of camels, sheep and horses have been confiscated. The Italian losses have amounted to 3 officers and 132 other ranks killed, and 6 officers and 257 other ranks wounded.

## MOROCCO

FRENCH OPERATIONS DURING THE WINTER.—Operations were continued successfully with very little fighting. The Marrakech forces advancing from Imiter, composed of six battalions, a squadron of *spahis*, one brigade of mountain artillery, a battery of motorised 75-mm. guns, two squadrons of armoured cars, and a squadron of aircraft, occupied some 12 miles of the Todra valley at its junction with the Imiter valley.

The eastern forces consisted of eight to ten battalions with artillery, armoured cars and aircraft, and operated in four columns. A northern flank guard of two battalions, with a battery and two troops of armoured cars, advanced from Mzizel to Agoudim and pushed on through Semgat to Amsed. Columns from Ksar-es-Souk and Tarda have occupied Tadiroust and Guelmina respectively. Slight opposition was encountered at Tadiroust, where auxiliaries had an engagement with tribes from the southern slopes of the Grand Atlas, but were repulsed with heavy losses. The French losses were two French officers and eight other ranks killed, and six other ranks wounded. A southern column from Guelifat moved up the Gheris valley and reached its junction with the Ferkla at Touroug. So far, 6,500 tribal families have submitted.

These operations, when completed by the establishment of posts, will close in the Ait-Atta, a troublesome nomadic tribe who live in the Sarro region, and will also cut off the main area of dissidence in the Great Atlas from communication with the south.

Meanwhile, the operations in the Todra and Gheris valleys have apparently ceased, and the construction of posts to consolidate the area occupied is being carried out. The northern flank guard has now been withdrawn to Mzizel. The force sent down the Dra has reached Amzrou where it is constructing a post.

On 15th January, 1932, the French occupied the very important oasis of Tafilalet, which has been the refuge of dissidents from the mountainous regions and of the raiding bands from the Sahara. Large forces of regular troops were concentrated on three sides of the oasis and bodies of auxiliary troops were pushed in. There was apparently not much fighting except around the citadel of Bel-Kacem N'Agid, the principal chief, who finally escaped westwards with a small party. He was pursued by cavalry and his chief lieutenant and a number of his rearguard were killed, and all his lieutenants have since been captured. A road is now being pushed through the oasis from north to south and is to link up

Erfoud with Risani; it will doubtless eventually join the existing track to Taouz. No opposition has been offered by the tribes now in the occupied area, and the leaders have given assurance of their loyal co-operation with the Maghzen.

A working party on the new road to Akka, one of the passes through the Bani Mountains, 200 kilometres south-east of Agadir, was attacked on 26th January by raiders who, after being driven off by the covering party, were pursued southward across the desert by aircraft.

The occupation of the Tafilalet is bringing about the submission of large numbers of families. Bel'Kacem N'Agid is now reported at Zegdou, 200 kilometres east by south of Tafilalet, and 70 kilometres east of the Draa. The establishment of posts along and on the flanks of the new line from Imiter to Erfoud is being continued, not without opposition. The post of Mecissi, 50 kilometres west of Tafilalet, was unsuccessfully attacked on 20th February, and a force moving from Ifech, on the north of the Ferkla plain, to establish a post at Bou Tarart was attacked by tribesmen from the north; these were driven off after hand-to-hand fighting, the French losses being 14 men killed, 2 officers and 8 men wounded. An officer with some auxiliaries was ambushed and killed at Touroug, near the junction of the Gheris and Ferkla valleys.

These operations should result in clearing the last obstacle to the suggested road and railway from Agadir by the Souss, Dades, and Ferkla valleys through Erfoud and Bou Denib to Algiers.

## UNITED STATES

MECHANIZATION: (1.) *Change of policy.*—The change of policy on mechanization is dealt with at some length in the Annual Report of the Chief of Staff of the Army. The following is an extract from this Report:—

"There have been two theories advanced to govern the application of mechanization to these tasks. The first is that a separate mechanized force should be so organized as to contain within itself the power of carrying on a complete action, from first contact to final victory, thus duplicating the missions, and to some extent the equipment of all other arms. The other theory is that each of the older arms should utilize any types of these vehicles as will enable it better and more surely to carry out the particular combat tasks for which it has been traditionally designed. Under this system mechanization would permeate the whole army, but it would be applied by each arm only as an additional means of securing victory.

"In the initial enthusiasm of post-war thought the first method was considered as the ideal one. Mechanized forces were expected to supplant the established order, or at least to constitute a *corps d'élite*, to be supplemented where necessary by foot troops, which would hold defensively the advantages gained by the mechanized striking force. This was the controlling idea in the establishment of 'mechanized forces' in our own and other armies, but continued study and experimentation have since resulted in its virtual abandonment. Inherent weaknesses and limitations in the machines themselves are such as to preclude their employment in many types of terrain. Moreover, the impossibility of having any considerable number of suitable armoured vehicles immediately available upon the outbreak of war is sufficient proof that such a doctrine is not applicable in any case to the early stages of a future emergency.

"Accordingly, during the last year the independent 'mechanized force' at Fort Eustis has been broken up. The cavalry has been given the task of develop-

ing combat vehicles that will enhance its power in rôles of reconnaissance, counter-reconnaissance, flank action, pursuit and similar operations. One of its regiments will be equipped exclusively with such vehicles. The infantry will give attention to machines intended to increase the striking power of the infantry against strongly held positions. Every arm is authorized to conduct research and experiment with a view to increasing its own power to perform promptly the missions it has been especially organized and developed to carry out. Every part of the army will adopt mechanization—and motorization—as far as is practicable and desirable. To the greatest extent possible machines will be used to increase the mobility, security and striking power of every ground arm, but no separate corps will be established in the vain hope that through a utilization of machines it can absorb the missions, and duplicate the capabilities, of all others."

(2.) *Organization of a mechanized cavalry regiment.*—Plans have been made to give effect to the new War Department policy of substituting a mechanized cavalry regiment for the Experimental Mechanized Force.

In May or June, 1932, the First Cavalry Regiment will move to Camp Knox, Va., where it will absorb certain elements of the disbanded mechanized force, and become the " First Cavalry (Mechanized)." A certain number of transfers of personnel are to take place in the meanwhile, in order that officers and men who are not attracted by, or fitted for, participation in this experiment in mechanization, may be transferred to other cavalry units, their places being filled by selected personnel from other units and other arms.

No tank company or artillery battery is to be included in the regiment. Eventually another mechanized cavalry regiment may be added to form a mechanized cavalry brigade, and then some artillery will probably be assigned to it.

A tentative organization for the regiment has been announced as follows :—

Headquarters.
Headquarters troop.
Machine gun troop.
One covering squadron—
    One troop of armoured cars.
    One scout troop.
One combat car squadron—
    Two troops of combat cars.

At present there is a shortage of suitable mechanical vehicles for the regiment. The armoured car troop will take over the armoured cars formerly with the Mechanized Force, namely, five light cars on commercial chassis and six heavier cars with 95 h.p. Franklin engines. Four Christie vehicles (wheel-cum-track hybrid tank-armoured cars) and one similar vehicle manufactured by the Ordnance Department will form the equipment of one combat car troop. The machine gun troop and the second combat car troop will be represented by machine gunners in lorries pending provision of armoured machine-gun carriers and additional Christies respectively. Details regarding the equipment of the scout troop, or the transport provided for headquarters, etc., have not been received.

(3.) *Move of the Tank School and Tank Board to Fort Benning.*—As a further result of this change of policy, the Tank School and Tank Board are to be moved to Fort Benning, where the Infantry School and Infantry Board are stationed. The Tank School is to become part of the Infantry School, but a separate course of instruction will be maintained.

# AIR NOTES

## ROYAL AIR FORCE

### ROYAL UNITED SERVICE INSTITUTION.

In an Air Ministry Order (No. 128 of the 31st March, 1932), attention is called to the suspension of the entrance fee of the Institution and the facilities afforded to officers for professional study.

The Order concludes: "The Air Council desire it to be known that they wish to give every encouragement to officers to join the Institution, compete for the essay prizes and take part in the debates after Lectures."

### AIR ESTIMATES FOR 1932.

The following are extracts of the more important sections of the Memorandum of the Secretary of State for Air which accompanied the Air Estimates for 1932:—

*Financial Summary.*—Air Estimates for 1932, at a net figure of £17,400,000, show a decline of £700,000 on those for the previous year. Appropriations in Aid are, however, down by nearly £800,000 (mainly on Vote 3—Technical and Warlike Stores), so that the gross total is some £1,500,000 lower at £19,702,700.

The decline is the direct and inevitable result of the current financial crisis: and, whilst a number of economies of a permanent character have been effected, it has only been possible to achieve so large a reduction by the postponement of many services, which, under normal conditions, would be regarded as essential, and by makeshift expedients which cannot be repeated. There has been no option but to sacrifice a number of important items in the programme, but effort has been concentrated on producing the results demanded of the Royal Air Force by the nation's necessities with the minimum loss of efficiency. In particular, no action has been or will be taken which might in any way adversely affect the safety of flying personnel.

The table below gives a summarised comparison with the corresponding figures for 1931:—

| | 1932 | 1931 | + or − |
|---|---|---|---|
| | £ | £ | £ |
| Gross Estimate .. .. .. .. | 19,702,700 | 21,197,200 | − 1,494,500 |
| *Deduct* Fleet Air Arm grant .. .. | 1,025,000 | 1,126,000 | − 101,000 |
| *Deduct* other Appropriations in Aid .. | 1,277,700 | 1,971,200 | − 693,500 |
| Net Estimate .. .. .. .. | 17,400,000 | 18,100,000 | − 700,000 |

*Disarmament.*—His Majesty's Government having subscribed to the Armaments Truce, no new units are being formed in 1932. In the normal course a minimum of two new Home Defence Squadrons would have been added under the programme initiated in 1923, but subsequently three times retarded, with the result that ten regular squadrons still remain to be formed for its completion. Meantime, despite general recognition of the growing dependence of the British Empire on

air power as on sea power, the serious disparity between the first-line strength of the Royal Air Force and foreign air services remains as tangible evidence of the efforts made by this country ever since the War to further the cause of disarmament. His Majesty's Government would view the situation with anxiety, but for their earnest hope and expectation that the Disarmament Conference now in session at Geneva will bring about a reduction in air armaments.

*Strength and Distribution of the Royal Air Force.*—The increases in the strength of the Royal Air Force foreshadowed in last year's memorandum, viz., three new regular squadrons for Home Defence and one additional flight for the Fleet Air Arm, have been duly implemented. As a result, the present total strength of the Royal Air Force is 75½ regular squadrons, including the equivalent of 13½ squadrons in the Fleet Air Arm.

The Home Defence Force now comprises 42 of the 52 squadrons envisaged in the 1923 programme, and of these 13 are non-regular—8 auxiliary and 5 cadre. The decision not to proceed with the formation of any new units in 1932 entails a further retardation of this programme for the fourth time since its original initiation.

The distribution of units as between Home and Overseas remains unchanged.

*Personnel and Training.*—Apart from the reductions in the pay of officers, airmen and civilians recently decided on by His Majesty's Government, substantial savings are anticipated from (i) the introduction of a modified scheme for short service officers, and (ii) the reorganisation of the School of Technical Training for apprentices at Halton.

[Details of the new scheme for short service officers were published in these Notes for last quarter].

As regards (ii), the School of Technical Training at Halton is being reorganised on a basis of two Wings (instead of three as at present) in the light of the reduced intake of Aircraft Apprentices, and substantial economy in instructional staff is thus rendered possible. There will, however, be no lowering of the standard of training given, which it is essential to maintain at its present high level in order to ensure the efficient and safe maintenance of aircraft.

The experiment is being tried of employing a slightly increased proportion of airman pilots as flying instructors in lieu of officer instructors; the scheme will also allow of the selection of instructors from among officers and airman pilots who have somewhat longer flying experience than has been possible in the past, and will thus tend to raise still further the already high standard of flying instruction. Airman pilots so selected as instructors will have their normal period of five years' flying service extended to eight years. The combined effect of these changes will be an appreciable saving in officer personnel and consequently in cost, and an improvement also in the career open to airmen.

Further progress has been made with the policy of relieving officers of such technical duties as can properly be performed by airmen, by means of the appointment of warrant officers and senior non-commissioned officers in the place of flying officers as signals and photographic instructors in squadrons.

*Reserve and Auxiliary Forces.*—Apart from certain minor restrictions, it has been found possible to secure the necessary economies in expenditure on the reserve and auxiliary forces without too serious curtailment of the normal training programme.

A notable feature of the training of the Cadre (Special Reserve) squadrons during 1931 was the participation, for the first time, and with highly satisfactory results, of two units, viz., No. 502 (Ulster) Squadron and No. 503 (County of Lincoln) Squadron, in night flying operations during the Air Exercises. Day-bombing squadrons of the Auxiliary Air Force also played an important role in these exercises, and showed once again a very high standard of flying and general efficiency.

During 1931 the number of flying hours completed by the University Air Squadrons at Oxford and Cambridge showed a further increase, chiefly in cross-country flying. Formation flying for the more experienced members was introduced for the first time. The number of Proficiency Certificates gained during the year reached a total of 74. Both squadrons were maintained at full strength throughout the year, and each has a long waiting list of candidates for membership.

*Technical Equipment.*—The re-armament of squadrons has necessarily been curtailed, but fortunately all machines of war-time design were already due to pass finally out of service on completion of the current year's programme and the Force is already to a large extent equipped with aircraft of types brought into service within the past five years.

Indeed, as a result of the steady progress in re-armament of recent years it may be said that the era of wooden aircraft has, in so far as the Royal Air Force is concerned, passed into history, and in 1932 its first-line units will be wholly equipped with machines either of all-metal structure or composite of metal and wood. Wood is, in fact, now employed only for the wings and tail units of a very small number of the older types and for certain small components. Experience is showing that aircraft of metal construction undoubtedly have a longer life than those of wood, and, in consequence, considerable economies in maintenance costs are being effected.

There is again a rise in the amount taken for petrol to meet the higher prices and the larger consumption due to increased flying and the use of more powerful engines.

*Research and Technical Development.*—As has already been announced, it has been decided, owing to the imperative need for reducing expenditure, not to proceed with the construction of a large civil flying boat, thereby releasing funds for other and more urgent requirements, in particular a fast mail-carrying aircraft. The research and technical programmes have had to be curtailed in a variety of other directions, in order to effect the necessary economies, a process which has, however, been assisted by the completion of certain works at Farnborough.

The Compressed Air Tunnel at the National Physical Laboratory will shortly begin its research programme, and in 1932 the modernisation of one of the existing smaller tunnels at the Laboratory will be put in hand. Construction of the Large Wind Tunnel at the Royal Aircraft Establishment, Farnborough, is also about to begin. A model for this tunnel was constructed in the form of a small 5-ft. tunnel, and this has proved so efficient that a new power plant is being provided which will enable the tunnel to be run at an air speed of 200 m.p.h.—the highest speed of any wind tunnel in the country.

The vertical tunnel, in which the wind is forced upwards instead of horizontally, enables an aircraft model to be set spinning in the rising column of air and its characteristics to be observed. This tunnel is 12 feet in diameter and provides a most valuable medium for investigating the all-important problems associated with "spinning."

The seaplane testing tank at Farnborough has been erected and, as soon as the adjustment of its carriage and mechanism (which require the greatest possible accuracy) is complete, a full programme of research will be set in train.

The reorganisation and reconstruction of the Royal Aircraft Establishment are now almost complete.

Among interesting developments of the year it may be mentioned that, for the purposes of the Schneider Trophy contest, a water-cooled engine, already of high efficiency and rated at 825 h.p., was developed to give no less than three times that power. Elsewhere the application of superchargers to maintain the horse-power obtained at ground level up to altitudes of eleven or twelve thousand feet has been extended and has entailed a special study of the freezing of carburettors at exceptionally low temperatures. An important series of flying trials at heights up to 15,000 feet has recently been completed with the special object of ascertaining the best means of obtaining fuel economy. Attention is being devoted to further experiments with compression-ignition engines intended primarily for large aircraft flying over long distances, in which the maximum economy of fuel is essential.

*Meteorology.*—The civilisation of the meteorological service in Iraq will be completed in 1932.

Normal research items will be restricted to £1,000, but a special provision of £4,000 is included for research in meteorology and magnetism in Polar regions. This expenditure will take the form of a grant-in-aid to the Royal Society and the Royal Society of Edinburgh, and is part of the international programme for the Second Polar Year, the object of which is to repeat and extend the meteorological and magnetic survey which was carried out by international co-operation in 1882–1883. A party of British meteorologists is to be sent to Fort Rae in Canada, where a British station was maintained during the First Polar Year fifty years ago.

### Appointments.

Air Commodores.—N. J. Gill, C.B.E., M.C., to Headquarters, Coastal Area, for duty as Senior Staff Officer, to date 18th January; J. B. Bowen, C.B.E., to Headquarters, Inland Area, for duty as Senior Air Staff Officer, to date 15th January; C. E. H. Rathbone, D.S.O., to Headquarters, Mediterranean, to be Air Officer Commanding, with effect from 2nd February; C. T. Maclean, D.S.O., M.C., to Air Ministry to be Director of Postings, to date 28th December, 1931.

### Administration.

Headquarters No. 1 Air Defence Group.—On 7th March these Headquarters moved to 33-34, Tavistock Place, London, W.C.1.

Aeronautical Inspection Department.—The Southern office of this Department will move to 33-34, Tavistock Place on 2nd May, 1932.

Armoured Cars.—In reply to a question in the House of Commons, the Under-Secretary of State for Air stated that R.A.F. armoured car units have been functioning in Iraq, as well as in Palestine and Transjordan, for the past decade with conspicuous success. . . . They are designed to meet the special requirements of the R.A.F., as they normally work in the closest possible co-operation with aircraft. . . . An interchange of officer personnel between the air and ground units had become essential. . . . The units are now entirely manned and commanded by R.A.F. personnel.

### Material.

Re-Equipment Complete.—No. 1 (Fighter) Squadron and No. 25 (Fighter) Squadron have been re-equipped with Hawker Fury (Kestrel) machines.

No. 502 (Bomber) Squadron has been re-equipped with Vickers Virginia (Lions) machines.

Re-equipment Approved.—The following new equipments will be issued during the quarter April to June, 1932 :—

Royal Air Force Depot, Aboukir, Armstrong Whitworth Atlas to replace the Bristol Fighter; No. 4 and No. 13 (A.C.) Squadrons, Hawker Audax (Kestrel) to replace the Atlas; Nos. 14, 35 and 207 (Bomber) Squadrons, Fairey Gordon (Panther) to replace the Fairey III F.; one Tiger Moth (Gipsy III) will be sent to each of the R.A.F. bases at Kai Tak and Singapore; No. 402 (Fleet Fighter) Flight, Hawker Nimrod (Kestrel) to replace the Flycatcher (Jaguar); No. 404 (Fleet Fighter) Flight, Hawker Osprey (Kestrel) to replace the Flycatcher (Jaguar). The Vickers Vildebeeste (Pegasus) will replace the Horsley (Condor) Torpedo-Bomber in June and July.

The Fairey Gordon (Panther) will replace the few Bristol Fighters left in No. 6 (Bomber) Squadron during the quarter. With this last replacement goes out of service the last of the Bristol Fighters from the first line units.

Seaplane Tenders.—As replacements for the war-designed seaplane tenders at present in use in the Service, eighteen "200 Class" motor boats are being supplied by the British Power Boat Company, Hythe, for use at the various seaplane stations. Most of these have now been delivered to home stations at Mount Batten, Plymouth, Calshot, Southampton, Pembroke Dock, Felixstowe, and at Inverkeithing in the Firth of Forth. Several are going to overseas stations at Malta, Basra, Aden and Singapore.

The tenders have been designed as general utility craft for work with flying boat or seaplane squadrons. Their principal duties will be stand-by flying duty; towing flying boats or seaplanes; refuelling aircraft at moorings; crash work on marine aircraft, etc. They are also fitted to take stretcher cases.

The boats are extremely economical to operate, one coxswain only being the normal crew. They are strongly built and embody a new method of construction, somewhat similar to that employed in the best British flying boats with wooden hulls. They have a speed of approximately 25 knots. The cabin and power plant is in the fore part of the boat, leaving the aft section free for service purposes. Each boat is equipped with two "Power" engines of 100 h.p.

### Army Co-Operation.

Little practical Army co-operation work has been carried out during the period under review. Squadrons have held short courses for senior military officers, at which demonstrations and lectures have been given and a limited number of air experience and short reconnaissance flights have been made.

The Squadrons have concentrated on armament training in preparation for the Armament Training Camps, details of which are given elsewhere.

### ROYAL AIR FORCE DISPLAY.

The Royal Air Force Display will be held at Hendon on Saturday, 25th June.

## OVERSEAS COMMANDS

### Inter-Command Development Flights.

As announced by the Secretary of State for Air, in the Memorandum accompanying the Air Estimates for 1932, the mobility of the Royal Air Force Squadrons throughout the world and their power of mutual reinforcement are being speedily developed by means of inter-command and local flights.

Four flights of this nature were carried out during the period under review.

East African Cruise, 1932.—Details and the itinerary of the above cruise were given in the Notes for the last quarter. The flight was completed without incident and according to schedule on 29th March.

At the request of the Governor of Kenya, advantage was taken of the opportunity afforded for an air reconnaissance, and occasional photography of the boundary line between Kenya and Italian Somaliland for a distance of approximately 229 miles South of Mandera, in order that the Kenya Government may gain information regarding the condition of boundary marks in a waterless country difficult of access.

Aden–Cairo Flight.—A flight of four Fairey III F. aircraft of No. 8 (B) Squadron, under the command of Squadron-Leader R. S. Sorley, D.S.C., D.F.C., left Aden on 9th February on a tour along the western coast of the Red Sea to Cairo, returning via Sudan.

Prior arrangements had been made for the flight to land at Massawa, in Italian Eritrea, for refuelling, on both the outward and return journeys. The total mileage covered on this tour was approximately 4,000 miles.

Aden–Somaliland Cruise.—A flight of three Vickers Victoria aircraft of No. 216 (Bomber Transport) Squadron left Heliopolis on 3rd March on a cruise to Aden and Somaliland.

The flight proceeded to Hurghada the first day, and on the 4th flew to Port Sudan and Massawa, in Italian Eritrea, was reached next day, where the flight remained until the 7th April, when it went on to Aden. On the 9th a local air tour of Nusomir, Dhala and Upper Yafa was made, and on the 11th the flight flew to Mukalla, taking the Resident on his annual visit to the Sultan. From Mukalla the flight carried out an air tour of the Hadhramaut on the 12th, and returned on the following day to Aden. Berbera on the 15th and Bureao were next visited, and on the 18th a cruise over Eastern Somaliland was carried out. The flight reached Aden via Berbera on 21st March. A troop-carrying practice flight to Mishal with Aden Protectorate levies was undertaken on the 22nd, the flight returning to Aden the same day. On the 24th the flight flew to Massawa, on the 26th continued to Port Sudan, and on the 27th reached Khartoum, where the 28th was spent. On the 29th it proceeded to Khasm El Girba, and returned to Khartoum next day. On 1st April a return flight to Khasm El Girba was carried out. Continuing the homeward journey the flight flew to Atbara on the 3rd, Wadi Halfa on the 4th, Aswan on the 5th, and completed the journey to Heliopolis on 6th April according to programme. The distance covered during the cruise, excluding the local flights carried out during the stay at Aden, was over 5,000 miles.

Flight of No. 205 (F.B.) Squadron from Singapore to Port Darwin.—On 15th March a flight of three Supermarine Southampton flying boats of No. 205 (Flying Boat) Squadron, under the command of Wing-Commander A. C. Wright,

left Singapore on commencement of a flight to Port Darwin. Intermediate landings were made at Klaabut Bay, Batavia, Sourabaya, Bima, and Koepang, Port Darwin being reached on 22nd March.

The return flight started on 30th March was made over the same route, and was completed without incident on 9th April.

## CYPRUS

In connexion with the serious civil disturbances in Cyprus in the autumn of 1931, the following incident is of interest as reflecting great credit on the Royal Air Force personnel concerned.

Two airmen, one of whom was a W/T Operator, were embarked, with supplies of aircraft stores, W/T equipment and fuel, which were urgently required in Cyprus, in S.S. " El Gharib," a 400-ton sixty year old Italian yacht. The vessel was manned by a Greek captain and a cosmopolitan crew, and should have reached Cyprus within twenty-four hours. After seventeen hours steaming, only 90 miles out of 245 had been covered. Some of the crew were ill, and all appeared inefficient, only one stoker then being at work. The W/T operator erected his W/T set and reported to Headquarters, Middle East, the reason for delay in arrival of stores at Cyprus. Land was sighted after forty-eight hours, and as the Captain mistook his position he would probably have run aground but for the intervention by the R.A.F. personnel, who obtained the correct position by megaphone from a passing vessel. At the entrance to Famagusta harbour, they ingeniously provided a substitute for a morse lamp, and communicated with H.M.S. " Colombo," which ship made the necessary arrangements for piloting and berthing S.S. " El Gharib." It was largely due to the initiative and resource shown by the airmen that the stores referred to reached Cyprus in time to be of use.

## MIDDLE EAST

### British Somaliland—Abyssinian Frontier Survey.

Arrangements have been completed between the British and Ethiopian Governments for the delimitation of the frontier between Abyssinia and the Somaliland Protectorate. As in the previous case of British–Italian Somaliland frontier delimitation, one of the main features of the survey will be the use of aircraft to assist in the task of demarcation by means of aerial photographic work on the boundary in co-operation with the ground survey party. A Royal Air Force officer has been appointed to serve on the British Boundary Commission in the capacity of Technical Assistant. His duties will be to direct the operation of aircraft employed on the survey, to act as connecting link between the Royal Air Force command providing the aircraft and the Chief of the Commission, and generally to advise the Chief of the Commission on the most efficient and economical employment of the aircraft placed at his disposal.

It is proposed to take advantage of this opportunity to test a method of photographic survey which is being developed in order to meet the requirements of the Army, in which the air photography can be completed independently of the progress of the ground party.

Preliminary work in connexion with the survey is already in hand, and the Commission is expected to start its labours almost immediately.

### IRAQ

In consequence of constant raiding of villages in the Baradost area by Barzan tribesmen, a punitive expedition by a small column of Iraqi Army troops was made on 9th December, 1931, with the object of capturing Shaikh Ahmed, the recalcitrant leader, or failing that, destroying his house and taking hostages. The engagement proved unsuccessful against the strong opposition encountered, and the Iraq Army column retired to Billeh with severe casualties, pursued by a number of Barzanis.

On the night of the 9/10th December, tribesmen from Raz Ian crossed the Zab and captured the Alka Police Post, which had been established as a temporary measure. This raid was a direct consequence of the reverse suffered by the Iraqi Army at Barzan, neighbouring tribesmen reacting very quickly to the set-back of the Government forces.

It was impracticable for climatic reasons to initiate extensive land operations at that period of the year, and in order to punish those Barzanis who had actively opposed the Iraqi Army column and to restore Government prestige in the area, air action was taken against Barzan, Resha and Shaikhan on 10th December, after the usual warnings had been dropped. Further air action was unnecessary, in view of Shaikh Ahmed's apparent willingness to negotiate, but reconnaissances were continued over the district pending the return of captured arms and equipment.

It has now been decided by the Iraqi Government to bring this area under administrative control, and on 15th March a force of three infantry battalions, one cavalry regiment, one mountain battery and one platoon of motor machine gun company with 200 police moved into the area from near Rowunduz. This Iraqi force was supported by the R.A.F., and its object was to establish police posts at various places.

A certain amount of fighting has taken place in which the R.A.F. have participated, and some casualties have occurred, including two R.A.F. personnel, one of whom was killed and the other wounded. The operations are proceeding, and police posts have so far been established at Merga Sor and at Biaisia.

(*See also* "INTERNATIONAL SITUATION," *p.* 398).

## AVIATION IN THE DOMINIONS

### CANADA

What is stated to be the largest single-engined aeroplane in the world is being put into service by the Canadian Airways, Limited, for commercial work in Northern Canada. The new machine, an all-metal low-wing monoplane, has a maximum speed of 117.5 miles per hour, is equipped with a 685 horse power water-cooled motor, and has a cruising speed of 100 miles per hour. The machine will be flown only with skis or floats, and a unique wing design will make possible a low landing speed of 47 miles an hour, and a high lift at low speed, both of which will be important factors in the class of work in which the large freighter will be used.

The machine, well equipped with the various instruments necessary to successful aerial navigation, will also carry the latest type of radio apparatus, and these qualifications, together with the plane's extensive cruising range, and its ability to carry both bulky and heavy loads, are expected to create a constant demand

for its services, particularly from the mining interests. It can, in round figures, carry two tons 1,000 miles without refuelling or three tons for 500 miles without refuelling.

### NEW ZEALAND

Training courses for all New Zealand Air Squadrons, which were suspended last year for reasons of economy, are being resumed.

## AVIATION IN FOREIGN COUNTRIES

### BRAZIL

Following on an order for fifteen training biplanes from the de Havilland Aircraft Co., Ltd., that firm is now building twelve similar machines for the Brazilian Navy. The former have already been delivered and the latter should be ready for despatch shortly.

### CHINA

According to reports which have appeared in the press, the Chinese Nationalists possess over sixty Pratt & Whitney engines installed in various types of aeroplanes. The latter include a number of two-seater observation biplanes supplied by the Douglas Co., and six Vought Corsair biplanes. A Boeing single-seater fighter, sold to China last year by the United Aircraft Export Corporation, was shot down near Shanghai by the Japanese, the American free-lance pilot being killed. The Chinese also have a number of Junkers K 47 two-seater monoplane fighters, and two Sikorski amphibians; one of the latter is reported to be used personally by General Chiang Kai Shek.

It is also reported that the Chinese Ministry of Marine are enlarging the naval air establishment at Shanghai, with a view to building or assembling aircraft there. The Director and Chief Engineer of the station is Captain Y. K. Tseng. His staff includes a number of young aeronautical engineers, most of whom were trained in Great Britain. Their first undertaking, it is stated, will be the construction of six seaplanes with 220 h.p. Wright Whirlwind engines, and it is anticipated that work on these will be started early next year.

### DENMARK

The Danish Government have acquired a licence from the Bristol Aeroplane Co., Ltd., to build aeroplanes of the Bristol Bulldog single-seater fighter type at the Royal Army Factory, Copenhagen. Torpedo bombers of the Hawker Horsley type are also to be constructed under licence in the dockyard of the Danish Department of Marine.

### GERMANY

1932 "FLIGHT ROUND EUROPE" COMPETITION.—The third competition in this series (now a biennial event) is due to commence on 14th July, 1932, and once again, is being organized by the German Aero Club, by virtue of a German victory in the competition of 1930.

Notifications from intending competitors were due in before 15th December, 1931, and the entrance lists for machines competing was opened on 14th March,

1932. The competition will as before consist of a technical test and a cross-country flight. The technical test will consist of the following trials :—

Minimum speed, taking-off and landing, fuel consumption, method and time taken for starting-up engine, ease of dismantling and erecting of the aeroplanes, and equipment.

Two hundred and eighty points out of the total 500 points attainable will be awarded for the technical test. The cross-country flight will begin on 24th July at 07.00 hours and end on 31st July at 20.00 hours. The place of departure will be Berlin–Staaken and the terminal aerodrome Berlin–Tempelhof. Two hundred and twenty points will be awarded for the cross-country flight, that is to say, 180 for the cruising speed and forty for regularity. The last stage of the cross-country flight will be utilised for a maximum speed test.

## ITALY

Do-X Aircraft.—The second Do-X aircraft, which has been ordered by Italy, has been completed and has been carrying out test flights from Lake Constance, where the internal equipment of the aircraft will be completed.

It is difficult to understand what object Italy has had in purchasing these aircraft, as, although it was rumoured that they were to be employed on civil air lines, no such use has so far been made of the first aircraft purchased, although it has now been over six months in Italy.

## JAPAN

Fuelling in the Air.—Japan has recently carried out experimental tests in connexion with the supply of fuel to aircraft during flight. The supply aircraft, after reaching a height of 3,000 feet, connected a hose with two other aircraft, and certain supplies were made by this method. The experiment fell short of expected success, but further experimental tests will be carried out.

Long Distance Flights.—With a view to Japanese participation in long distance record flights, an aircraft that will fly for seventy hours and cover 7,500 miles has recently been designed in Japan. It is hoped by challenging the existing records to obtain a larger measure of public interest in Japanese aviation development.

Japan–Formosa Air Service.—A Dornier Wall floatplane of the Japan Air Transport Co. successfully completed a flight between Fukuoka (Japan) and Tansua, (Formosa) a distance of 800 miles, on 4th October, 1931, in 9½ hours. This is the second test flight prior to the operation of a regular Japan–Formosa Air Service.

## SOVIET UNION

An account by Vicomte de Sibour of his flight from Paris to Pekin, published in the French Press, is of special interest in regard to the details he gives of conditions for aviation in the Soviet Union. Re-fuelling, he says, presents no difficulties. Petrol is supplied in 100 kg. barrels and oil in 20 kg. cans. All calculations are in kilogrammes. The density of the petrol varies around 710 (sometimes 810). A mixture of benzole petrol can be obtained West of Moscow, but beyond Moscow the density is 710 or 810. The Soviet Government, would, on request, establish depots, if other fuels were required. The Gargoyle A.A.C.

mineral oil was excellent. It appears that small quantities of castor oil can also be obtained practically everywhere; but no opinion can be expressed as to its quality. Refuelling usually takes some time; assistance is given but without any hurry. Petrol (Keressence) and stiff lubricant are available everywhere.

The Russians are making enormous progress in aviation. The aerodromes, although small on the whole, are good and have free approaches. There is only one railway line—the Trans-Siberian—which can be followed across this immense country. As regards other routes, the maps are for the most part inaccurate, and not to be trusted.

The meteorological service supplies information as to weather conditions, the direction of the surface wind and visibility. Before taking off from any place, the aerodrome manager gives a summary of this information, which is supplied by all aerodromes at his request. About 1¼ hours are required to obtain reports over a distance of 1,000 km. Upper wind reports and weather forecasts are unknown. At certain aerodromes the conventional ground signals are displayed.

Scarcely any hangars are to be found outside the big towns such as Smolensk, Moscow, Omsk, Irkutsk, and Chita, and stakes and rope should be carried. As the dew is very heavy at night, it is as well to have a cover for the engine. Owing to the variations in temperature, the state of the tyres should be watched; they should not be inflated too much and should be protected from heat. A guard is always left with the aeroplane at night in Russia, but it is unnecessary; in China, however, care must be taken to have several guards. Beyond Irkutsk the air route is only used for air mail services, and the aerodromes are much further apart.

There are no aerodromes in the North of China, but the ground is suitable for emergency landings. There is no meteorological organization. Petrol (Russian or Shell), which is not too dear, can be got at certain points, but only automobile oil can be obtained. There are no difficulties in refuelling at the big towns.

GENERAL NOBILE.—An announcement has recently appeared in the Press that General Nobile, who was in command of the Italian airship expedition to the North Pole in 1928, which met with disaster, has been appointed Chief Constructor of airships to the Soviet for four years.

## SPAIN

A Press report states that twenty-six Vickers Vildebeeste torpedo-carrying aeroplanes are to be built under licence in the factory of Construcciones Aeronauticas S.A. at Cadiz. This type can be easily converted from a land machine to a seaplane.[1]

## UNITED STATES

### ESTIMATES FOR 1933.

*Army Air Corps.*—The Estimates for the year ending 30th June, 1933, under the "direct" heading, amount to $25,750,000, a decrease of $6,000,000 on the appropriations for the previous year. This decrease is mainly attributable to reductions of $4,000,000 for purchase of new aircraft and equipment, and $2,000,000 under maintenance and operation. The research estimate, however, shows an increase of $500,000.

[1] A model of this aeroplane can be seen in the R.A.F. Section of the Museum.

*Naval Air Service.*—The "direct" estimate amounts to $26,750,000, a reduction of approximately $4,500,000. The vote for purchase of new aircraft and accessories is reduced by $3,000,000, while the contract authorization for the same purpose, to be met in the following Budget, is lower by approximately $2,500,000. Maintenance and Operation estimates show an increase of $750,000.

The large decrease in the amounts required for aircraft purchases in both the Army and Navy are due to the fact that the five-years' expansion programmes are now complete, and it is only necessary to provide for replacement aircraft.

DIRECT FUEL INJECTION FOR AERO ENGINES.—The American Pratt and Whitney Company have developed a system in which the normal carburettor is replaced by a series of fuel pumps, one for each cylinder, by which the fuel is injected direct to the cylinder. A "Hornet" engine, an air-cooled radial, has been fitted with this system, and tests have been conducted with it during the last few months. The engine is stated to have been proved entirely practical, and it has now been fitted in a Boeing air mail aircraft for extended test under normal operating conditions.

# AIRSHIP NOTES

## GREAT BRITAIN

FUTURE POLICY.—A provision of £16,000 is made in the Air Estimates for 1932 to cover the cost of maintenance parties at Cardington, Ismailia and Karachi, and of a small nucleus staff which is being retained at the Royal Airship Works at the first named place. Buildings, machinery and plant are to be kept in such a condition that they can be readily made available for use if required either for our own purposes or for the reception of visiting airships from abroad.

Squadron-Leader R. S. Booth, who commanded "R.100," has been visiting Friedrichshafen, where he has been given facilities to inspect the new rigid airship "L.Z.129." He was also invited by Dr. Eckener to take passage in the "Graf Zeppelin" on a flight across the South Atlantic and back.

This visit is part of the policy of the Government whereby touch will be kept with airship developments in Germany and the United States.

## GERMANY

"GRAF ZEPPELIN'S" TRANSATLANTIC FLIGHTS.—The "Graf Zeppelin" continues to carry out her scheduled flights between Friedrichshafen and Pernambuco, Brazil. During the current year her time-table includes ten such flights; the first three of these have already been completed.

On the first of this year's flights, the airship left Friedrichshafen at 12.30 a.m. on 21st March. She carried a crew of forty-four and nine passengers, also about 280 lb. of mails. She arrived at Pernambuco at 3 p.m. on 23rd March, and left again on 26th March, reaching her home port at 4.30 p.m. on 29th March.

On the second flight, early in April, the airship did the outward voyage in the record time of 61 hours.

The third flight was completed on 27th April. Amongst the passengers on this voyage was Squadron-Leader R. S. Booth.

"L.Z.129."—Further details which have been made public in regard to the new rigid "L.Z.129," building at Friedrichshafen, state that this airship will have a capacity of 7,500,000 cubic feet, which will make her the biggest craft of that kind ever designed. As already noted in the JOURNAL, she is to be filled with helium and have crude oil engines.

## UNITED STATES

"AKRON" DAMAGED.—The naval airship "Akron" was damaged while being walked out of her shed at Lakehurst on 22nd February. A gust of wind caught the airship broadside on, she got out of control of the handling crew, and after

rising some twenty feet, bumped heavily, damaging the auxiliary control cabin in the lower fin and one or two of the main wings; large sections of the fabric on the lower side were also ripped off.

The accident necessitated somewhat extensive repairs.

THE NEW AIRSHIP.—The "ZRS-5" is to be named the "Macon." She is, at present, being built as a sister ship to the "Akron," but it is under consideration to increase the size from 6,500,000 to 7,500,000 cubic feet; the latter, it is interesting to note, is the capacity of the new German airship "L.Z.129."

MERCHANT AIRSHIP BILL.—An American Press report states that a Bill is to be introduced in the present Congress, the purport of which is to encourage the construction in the United States of airships for regular operation on foreign trade routes, under American control. It is proposed that these airships shall be eligible for mail contracts on the same lines as the Merchant Marine.

The successful voyages of the "Graf Zeppelin" are pointed to as evidence of the potentialities of the airship for first-class passenger traffic, and for speeding up trans-oceanic communication generally.

# REVIEWS OF BOOKS

## GENERAL

**Military Operations: Gallipoli. Vol. II.** May, 1915, to the Evacuation. Compiled by Brig.-General C. F. Aspinall-Oglander, C.B., C.M.G., D.S.O. Maps and sketches compiled by Major A. F. Becke, R.A. (retired). (William Heinemann, Ltd.). 15s., and 4s. 6d. for volume of Maps and Appendices.

The main purpose of all war histories should be so to record the facts of a campaign that readers may draw profit and instruction therefrom. Up to five and twenty years ago the normal official war history merely recorded facts and gave the reader no precise guidance as to deductions. The official historians of the Great War have wisely made a new departure and definitely give indications of their own opinions as to the lessons to be learnt from their writings.

The facts in the volume now under review are clearly and admirably set forth by the author. Especially good is his elucidation of the complicated fighting in the tangled ground surrounding Chunuk Bair from the 6th to the 8th of August and of the muddle and irresolution which followed the Suvla landing during those four crucial days. The maps, too, are admirable, but it is a pity that the sketches bound up with the volume were not so arranged as to facilitate studying them without loss of sight of the text referring to them.

The volume, like its predecessor, is a storehouse of valuable experiences of many kinds, but more specially of those most difficult of war operations, a landing in hostile terrain in face of opposition and of night marches in unreconnoitred and broken ground. But the two great questions emerging from this official history are :—

(1) Was the Gallipoli project a strategically sound enterprise ?

(2) To what causes was its failure due ?

As to the soundness strategically of the Gallipoli adventure, it is conceived few readers will remain in doubt after a careful study of this volume. The author establishes that success, if achieved, would have rendered unnecessary the Salonika and Palestine campaigns, would have probably saved a million lives and would have brought the war to a successful conclusion at least a year earlier. The reasons for its failure should therefore be studied with the utmost care, for they provide most important food for thought when matters affecting national safety may have to be considered in the future.

The main and primary reason for the failure of the Gallipoli expedition was undoubtedly the incapacity displayed by the British Government in the higher control of the naval and military operations of the Great War. At Gallipoli the initial blunder, the first naval attack on the Straits without military help and the subsequent delay in providing troops for joint naval and military action in the second attack, resulted in local tactical success only being achieved by the splendid gallantry and self-sacrifice of the troops, and failure to secure any strategical advantage. Later, there was lamentable delay and vacillation before the sorely needed reinforcements were despatched. Not only in men but, too, in the still more important matter of guns, ammunition, and equipment, the M.E.F. were, as the author suggests, treated " as an illegitimate child," getting invariably the

worst of everything, and being always kept short. Marked instances of this are the refusal, in the middle of 1915, of Sir Ian Hamilton's request that two or three experienced Generals might be sent to him from France, and the subsequent selection of Lieut.-General Sir F. Stopford as a Corps Commander to undertake the difficult task of a hostile landing by young and inexperienced troops, although that General had never exercised any command in war and had been for three years unemployed.

The vacillation and delay which the Government again displayed after the failure of the Suvla enterprise are ruthlessly analysed on pages 378 to 386. Most remarkable is the statement made therein that the General Staff at the War Office were practically ignored until Sir Archibald Murray's appointment as C.I.G.S. in September, 1915, and that no joint Naval and Military Conference to consider the next strategical problems of the war was assembled until October, 1915. It is noteworthy, too, that that Conference recommended the early despatch to the Gallipoli theatre of six British and two Indian divisions from France, a reinforcement which they considered should suffice to ensure capture of the Peninsula, and that in connexion with this recommendation the First Sea Lord, Sir Henry Jackson, protested against the sheer madness of the proposed Salonika expedition, and urged the direct use of the Navy to assist the Gallipoli attack. All these recommendations were, however, put on one side by the Cabinet.

Finally, when it became clear that no reinforcements would be sent to Gallipoli and that the retention of the weakened force at Sir Ian Hamilton's disposal on the Peninsula throughout the winter would involve great danger, the decision as to evacuation was culpably delayed until the stormy season rendered it a really hazardous operation, an operation indeed which would have resulted in heavy disaster, but for exceptional luck in weather and a combination of naval and military staff work which an Austrian critic and eye-witness has termed " a hitherto unobtained masterpiece."

The story of the Gallipoli expedition is indeed throughout a proof and an example of how ill-adapted a democratic Government is for conducting the serious business of war. It is a problem urgently requiring solution, unless it may be assumed that war can never recur. Greatly is it to be hoped that the enhanced status, given by recent arrangements to the professional heads of the three fighting Services in the consideration of defence questions in peace time, may be continued and extended, should war again come.

But in all campaigns, whatever the shortcomings of higher authority, the Commander-in-Chief on the spot must of necessity be held responsible for the proper use of the force placed at his disposal. The author of this record was himself a member of Sir Ian Hamilton's staff, but he does not on that account shirk the historian's responsibility in this respect. Indeed, though with the utmost personal loyalty, he does not fail, from time to time, to discuss possible criticisms of his late Chief. In one case only, it seems, does he admit their soundness, that is the extreme secrecy preserved by G.H.Q. as to the landing at Suvla, a secrecy which certainly deprived Commanding Officers and staff, not only of maps but of any possibility of understanding beforehand, the objects of the landing and of thinking out their course of action on reaching the shore. Another criticism referred to and partially accepted in this volume is that the C.-in-C. would have done better to have moved his headquarters to Suvla instead of remaining at Imbros for the first two days of the enterprise. But as to this, it must be borne in mind that two tactically distinct operations were being launched simultaneously on the night of the 6th August, and of these two the Anzac plan, which involved

a night march in close proximity to a strong and alert enemy through difficult and only partially reconnoitred ground, was an enterprise seemingly more risky and involving the possibility of more hazardous situations than that of Suvla. That being so, it is reasonable to conclude that Sir Ian was perfectly right in deciding that he must remain at a centre where he could keep in touch with both enterprises sufficiently to intervene should any unforeseen situation arise.

Be that as it may, it is indisputable that Sir Ian Hamilton throughout the campaign enjoyed the full confidence of his troops and that, had he been given the men and equipment to which he was entitled, he would have achieved a success which might greatly have hastened the termination of the war, and probably would have left the world in a better condition than it now is.

This second volume contains no amazing story of the accomplishment of the seemingly impossible, such as the account of the landings, in the first volume, but it does record in a manner the more convincing, in that it is matter of fact and official, not only much gallant fighting, but also the splendid endurance and discipline of the troops—Regular, Dominion, New Army, Territorials and Indian—under conditions nearly as difficult as those of the first winter in France. Courage and cheerfulness are easy to maintain when victory seems in sight, but their continued manifestation when the thermometer of hope steadily falls is an unpleasant test for the best of regular troops, and for the newly raised a strain the gallant bearing of which should be ever remembered to their honour.

The unvarying loyal co-operation between the naval and military chiefs and their respective staffs to the utmost extent that Government vaccilation permitted, stands out clearly throughout the whole campaign. To Admiral de Robeck, Admiral Wemyss and members of the Royal Navy the Mediterranean Expeditionary Force owes deep gratitude.

Brigadier General Aspinall-Oglander is to be congratulated most heartily, not only on the lucidity of his narrative of the facts of the Gallipoli Campaign, but also on the admirable frankness with which he has brought out its lessons.

**Ludendorff: The Tragedy of a Specialist.** By Karl Tschuppik., Translated by W. H. Johnston, B.A. (Allen & Unwin, Ltd.). 16s.

Mr. Johnston's translation of Herr Tschuppik's book presents to British readers a theme of great interest—the relationship between soldiers and statesmen. The author has much to say of the moulding of the Prussian General Staff, of the adherence of Ludendorff to the principles laid down by Schlieffen, of the war on two fronts, of the collapse of Germany; not through war-weariness or a spirit of defeatism but through the tardy realization of the truth that it could no longer feel confidence in experts.

The author's main contention is that the whole training and mentality of a soldier makes of him a specialist—an expert. An expert, he says, is a fanatic and ignorant of everything outside his subject. The limitations imposed by a military mentality prevent a soldier from reading and interpreting political situations. Political talent, he says, requires a different kind of knowledge of human nature and a greater knowledge of international factors than a soldier can possibly possess. The German bourgeoisie had, however, not been in existence long enough to produce political talent. Owing to this lack of political sense in the German statesmen and the enormous prestige of the military caste, the politicians preserved a deferential attitude and gave undue heed to military opinion. Thus a position of practical dictatorship was forced on the High Command, unequipped as it was to realise anything but the attainment of its

military ends. It was due to these conditions that two fatal decisions were made. First, the proclamation of the independence of Poland, which embittered Russia without adding the much desired Polish army to those of the Central Powers, and secondly, the introduction of unrestricted submarine warfare, which brought the United States into the War without incapacitating Great Britain. The author ends on the note that it was the tragedy of a great commander like Ludendorff that he was a sword which there was no intelligence fit to wield.

**Eminent Authorities on China.** By Ronald Hall. (George Allen & Unwin, Ltd.). 8s. 6d.

This book consists mainly of lengthy extracts from the works of well-known writers on China, and provides good entertainment. Mr. Hall sets out, with obvious enjoyment, to contrast the diverse views of accepted authorities, as, for instance, when he quotes from original diaries to show that the Macartney Mission did not fail through ignorance—the reason given by Professor Soothill—but rather through the inherent incompatibility of two civilisations. The fact is that Lord Macartney was set an impossible task, for no self-respecting Ambassador could have reconciled the subservience required by the Chinese Court with his position as the King of England's representative.

Only a very small part of the book is devoted to writers who have dealt with the last twenty years. This gives the whole a somewhat ill-balanced effect, and is an obvious fault in an attempt " to extract some sort of satisfying truth " by dealing with the " judgments of the more important writers." Though the problems of China to-day are deeply rooted in the past, the influence of recent world events has been stupendous, and many of the characteristics which were hailed in Europe as such curiosities before the fall of the Manchus are fast losing their importance, even when they are not being profoundly modified. We should not be much influenced by the manners of George IV's Court, were we considering the state of England to-day, and for a fair judgment of modern China too much stress must not be laid upon the old stories of pre-revolution days, admirable material as they are for the historian.

**Arms and the Woman.** By E. V. H. S. Culling and J. B. Booth. (John Murray). 7s. 6d.

This little book is made up of the reminiscences of a lady who organized and managed, almost throughout the entire War, a British Red Cross canteen at Revigny, on the French front. As Revigny lies but a few miles behind Verdun, her task was often a hard one, and she saw the French soldier emerging or going into some of the hardest fighting in which he participated. Her remarks are always to the point and of interest. Later in the War, the Americans appeared on this front, and she has much to say about the " doughboy." Thus she relates how an American soldier informed a French interpreter that since he had been out he had been recommended for two medals after the affair at Chateau-Thierry. " Splendid ! " said the Frenchman drily. " Superb ! One for Chateau and the other for Thierry, I suppose ? " The truth is the Americans had too much money to spend, and this did not make for popularity.

After the War, Mrs. Culling continued her work with the French Army of Occupation, and subsequently went to organize a military canteen in Syria.

## NAVAL

**The Court Martial of the "Bounty" Mutineers.** Edited by Owen Rutter, F.R.G.S. (William Hodge & Co., Ltd.). 10s. 6d.

This is one of the "Notable British Trials" series of publications, which range from the trial of Mary Queen of Scots in 1586 and of Captain Kidd in 1701 to the Rouse case last year. So far as the essential facts connected with the mutiny are concerned, the book adds little to existing history; but its chief *raison d'être* is, obviously, to record in detail the proceedings of the oourt-martial, as these occupy more than three-quarters of its pages.

The proceedings bring out very clearly the part played in the mutiny by each of the ten surviving prisoners, and the impression left is that, whatever the defects of those times, this particular court-martial, at any rate, was very fair in its sentences, even though one prisoner subsequently evaded the death penalty through an astute lawyer discovering a technical flaw in procedure in his case.

The editor of this work pays special tribute to the Institution for the assistance he has received, and mentions that our library is fortunate in having one of the few known copies of a very scarce pamphlet written by one Edward Christian, brother of the ringleader, which purported to give "a full Account of the real Causes and Circumstances of that unhappy Transaction" (the mutiny). . . . He also alludes to a few of the many relics in the Museum connected with the "Bounty" and Pitcairn Island. The book is a painstaking compilation of matter of considerable historical value.

**Naval Customs, Expressions, Traditions and Superstitions.** By Commander W. N. T. Beckett, M.V.O., D.S.C., R.N. (Gieves, Ltd.). 2s.

This is a most entertaining little collection of definitions and descriptions of, and relevant incidents connected with, old Navy terms and traditions, many of which are used by or well-known in the Service of to-day; but others are in danger of being forgotten, while the origins even of those which are still the daily language of the sea are liable to become obscured or perverted with the passing years.

We warmly reciprocate Commander Beckett's wish that his "small beginning" may bring forth a more complete work of the kind; yet we would like it to have his own breezy and humorous touch.

## MILITARY

**Belated Comments on a Great Event.** By Major-General H. Rowan-Robinson, C.M.G., D.S.O. (Williams & Norgate). 4s. 6d.

This book contains within the compass of just over one hundred pages a summary of the comments and criticisms regarding the great German attack on Gough's Fifth Army in March, 1918. The views here expressed seem likely to find acceptance, since they agree in general with those now being put forward by the best military opinion at home and abroad. There is no attempt at any narrative of the operations; indeed, some slight knowledge of the whole course of events is a necessary condition to an understanding of the book. If that condition be fulfilled, the book reads easily and appears eminently well-balanced in its conclusions.

We would particularly draw attention to the author's exposition of the question of the General Reserve, which leads him to the conclusion that only a strong unified high command could have created such a Reserve, and then handled it as this should have been done.

In his conclusion the author ascribes some of the blame that attaches to British G.H.Q. for the whole treatment of the situation, both before and during the German attack, to the training and doctrine inculcated into the British Staffs by the Staff College. A good deal of this may be true ; but there are also fundamental defects of national character which will always tend to produce similar results. The Englishman is essentially animated by a great desire for exterior forms and minute arrangements ; by nature he mistrusts imagination and originality ; he prefers to meet the emergency rather than to take steps to avert it. All this is, in fact, brought out by the author in this clearly argued book. But why was it not kept back until General Gough's book " The Fifth Army " had been published ?

**The War on the Italian Front.** By Luigi Villari, M.C. (Cobden-Sanderson). 18s.

Hitherto all too little has been known about the War on the Italian front. This book, although essentially a popular account of the struggle and written from a strongly Italian standpoint, will provide a clear and easily read narrative of that campaign. It opens with a short exposition of the political situation of Italy at the outbreak of the Great War in 1914, and then describes the reasons and the course of events which led Italy to side against the Central Powers.

At the very outset of hostilities, the Italian troops were plunged into trench warfare. There was no preliminary phase of mobile operations. For the next two years the Italian G.H.Q. kept up a series of offensive actions on the River Isonzo which were entirely of the nature of a war of attrition. The Italian losses rose to over 450,000, and there was little to show for this expenditure of life. On the other hand, along the entire Trentino front, which ran roughly from East to West, from the Isonzo as far as the Swiss frontier, there was waged a species of mountain warfare of a remarkable kind. Here the Italian mountain troops had full scope to show their resourcefulness in this class of fighting : trenches cut in glaciers, cable railways and various improvisations, all showing great ingenuity, entered into the Italian plan of defence, for the Trentino front was essentially defensive.

After two years of fighting on the Isonzo, the Italian morale began to crack. Signor Villari does not conceal the growing weaknesses, which were exploited with such devastating effect by the Austrians, reinforced by German mountain troops, in the Battle of Caporetto. After their heavy defeat, the broken Italian armies succeeded in holding the line of the R. Piave, just as French and British reinforcements appeared. A re-organized Italian army was at length able to fight the successful Battle of Vittorio Veneto in October–November, 1918, when the military power of Austria was finally broken.

Three chapters also describe the Italian participation in the fighting on the Western Front, in Macedonia, and Albania respectively.

The whole book is commendably succinct and lucid, but it sadly lacks a good general map : the maps in the volume might also have shown more military detail, while they are inserted in the wrong order. These faults do not, however, detract from the value of a most readable work.

**A Guardsman's Memories.** By Major-General Lord Edward Gleichen, K.C.V.O., C.B., C.M.G., D.S.O. (Blackwood & Sons, Ltd.). 15s.

This lively volume of reminiscences affords much good reading, though why it should be entitled a " guardsman's " memories is not quite clear, as the author seems to have put in remarkably little service with the Brigade of Guards, except on active service. Three times he served in Egypt and the Sudan ; he played a

distinguished part in the South African War; he was Military Attaché at Berlin, and ended up that tour of service with one year at Washington. In the intervals, either on duty or on leave, he travelled far—in Morocco, Persia and Turkey. For the greater part of his career he was employed in intelligence duties enjoying several tours of service at the War Office in the performance of that type of work: a varied life indeed.

Although closely related to the Royal Family, there is little evidence that "Count" Gleichen—as he was called before the war—ever presumed on this connexion either for purposes of advancement or for obtaining comfortable billets. Nevertheless, he can be regarded as having been a remarkably fortunate soldier. Even when severely wounded in the neck in South Africa, he escaped instant death by a hair's breadth.

The whole book is replete with good anecdotes and shrewd criticism of current military matters. In particular there are two chapters that will attract the reader of military history. The first is that dealing with the South African War, in which Lord Gleichen relates in detail his views on the earlier part of the campaign. He certainly saw some of the hardest fighting that took place in the western theatre, while his remarks concerning the fall of Sir Henry Colvile are unusually interesting. In certain respects that episode recalls the subsequent débacle of Sir Hubert Gough in 1918. The General's lot is not always a happy one!

The second portion of the book that is of unusual interest, deals with the "Count's" tenure of the appointment of Military Attaché in Berlin. Here we derive the impression that the Kaiser obviously took a dislike to him. Lord Gleichen ascribes this fact to his having differed from the Kaiser in conversation. We somehow feel that for once the relationship to King Edward, the German extraction and the perfect command of the German tongue, combined with an unusual insight into the ways of German Society and of the German Army, may have had much more to do with the Kaiser's antipathy.

To all who have served in the Intelligence Branch of the War Office the book will inevitably recall many pleasant memories—after all the Intelligence Branch between about 1890 and 1910 was the nursery of many officers who rose to prominence both in the office and in the field. Even the uninitiated should be able to appreciate with relish the greater part of these military reminiscences.

**The Armies of the First French Republic and the Rise of the Marshals of Napoleon I.** Volume III. By the late Colonel R. W. Phipps. (Oxford University Press). 18s.

This is the third volume of the important and most readable work in which Colonel Phipp's purpose was to show how the Marshals of Napoleon I acquired their military training and experience. In order to do so, he describes shortly, but with quite sufficient detail for the student of to-day, the campaigns of the First French Republic, some of which, in spite of their interest, have never attracted much British attention. The present volume gives those of "The Armies in the West, 1793–1797," which include La Vendée and the following "Chouannerie," and those of "The Armies in the South, 1792 to March, 1797," which includes the civil war at Marseille, Lyon and Toulon (where the British gave assistance to what we should now call the "White French"), the war against Spain and the early operations on the Italian frontier before Napoleon Bonaparte received chief command there.

La Vendée apparently proved a poor school of training; the best generals employed there, Marceau, Kléber and Hoche, did not, however, live on into the

Imperial era. Berthier, Augereau and Davout were there, but only for a short time; Grouchy for a longer period; and it was many years before he was promoted to be a Marshal. The two Pyrenean campaigns produced only one Marshal, Moncey. It was the army of Italy which proved to be the great school of Marshals, perhaps because Napoleon, who managed to evade going to La Vendée, was connected with it, and because the Republican Government interfered less with the appointment of generals in it than in the other armies. Masséna, Suchet, Victor, Bessières, Lannes and Junot served in it as young men.

**Indian Infantry Colours.** By Captain H. Bullock, F.R.Hist.S., I.A. (The Times of India Press). 15s.

This is not a catalogue of the Colours and Standards carried by the Indian Army, but rather a short treatise dealing with the types of Colours and Standards that have been carried by Indian Regiments. In addition there are historical details connected with particular Colours. The matter is one of real value, and should appeal to all officers of the Indian Army who may be interested in their regimental history. The book is handsomely illustrated; the arrangement is practical, so that reference is easy; but, even so, we should have liked to have had an index. The author, however, may be congratulated on having broken new ground with success.

## DIVISIONAL AND REGIMENTAL HISTORIES

**The History of the 19th Division, 1914-1918.** By Everard Wyrall. (Edwin Arnold & Co.). 21s.

The 19th Division was one of the original formations constituted under Kitchener's appeal to arms at the outbreak of war. It was in the second Army, then known as K. II. It embarked for France in July, 1915. It fought in the IInd Corps at Loos; in the IIIrd Corps at La Boisselle from 1st July onwards on the Somme; in 1917 it took part in the Battle of Messines. During the great German offensive of March, 1918, it fought with the Third Army; it was then moved North and was engaged at Messines in April. Thence it was moved, as part of the IXth Corps, to Champagne, where it took a heavy share in the German attack on the Rheims front. Lastly it formed part of the XIIIth Corps in the final advance. This is a fine record. The narrative is not overloaded with detail and is the work of an experienced writer. The maps are clear and large; the appendices are few and of more general interest than usual.

**The History of the Lincolnshire Regiment.** Edited by Major-General C. R. Simpson, C.B. (The Medici-Society). 8s.

The Lincolnshire Regiment was represented in the field by two Regular, four Territorial and four Service battalions, all of which saw some of the heaviest fighting of the Great War in France. One battalion served in Gallipoli and Egypt. In addition, a number of units were raised as third-line Territorial, Garrison or Labour battalions. In all there were nineteen units of all types.

The editor has adhered strictly to a true chronology, the doings of each battalion falling into their correct places in the narrative. It is a modestly told story that appears to be scrupulously accurate. The skeleton maps enable the reader to place each battalion throughout the operations that are described. There are the usual appendices.

**The History of the Duke of Cornwall's Light Infantry, 1914-1919.** By Everard Wyrall. (Methuen & Co.).

The 1st Battalion of the D.C.L.I., since it formed part of the 5th Division, fought in the Great War from the Battle of Mons down to the Armistice. The 2nd Battalion came homefrom the East to join the 27th Division; but in November, 1915, left France for Salonika. In addition to these two Regular battalions both Territorial battalions were doubled and all four fought overseas. Lastly, seven Service battalions were raised, of which five went overseas, all to France or Salonika, while one Territorial battalion, 1/4th, also went to Palestine.

This history, being in the nature of a regimental memorial, is compiled in a lavish style, and goes into much detail. It is well written, and plentifully supplied with maps, plates and appendices.

**The Essex Regiment: 1st Battalion (44th).** By John Wm. Burrows, F.S.A. Southend. (John H. Burrows & Sons). 5s.

Although not a new work, this book has been so much improved and enlarged as to be virtually a new publication. In particular, the chapter dealing with the South African War has been totally re-written. A noteworthy introduction is contributed by Sir Ian Hamilton.

**Historical Record of the 4th Battalion 16th Punjab Regiment.** Edited by Captain W. R. Mole. (Privately published).

This elegant little regimental history recounts the existence of the Bhopal Levy from its creation in 1818 through various changes until it gained its present title. The story is divided into five parts :—(i) 1818–1914; (ii) France, 1914–1915, including the Battles of Neuve Chapelle, Festubert and second Ypres; (iii) Egypt, 1915; (iv) Mesopotamia, including the capture of Baghdad; (v) 1919–1930.

The personal reminiscences incorporated in the narrative of the Mesopotamian fighting might be singled out as being particularly vivid and full of sound sense. The maps, if meagre, are adequate. The appendices are very short.

# ADDITIONS TO THE LIBRARY

## GENERAL

THE COURT MARTIAL OF THE "BOUNTY" MUTINEERS. Edited by Owen Rutter. 10s. 6d. 8vo. (William Hodge & Co.). Presented by the Editor.

SOVIET TRADE AND WORLD DEPRESSION. By H. R. Knickerbocker. 7s. 6d. 8vo. (John Lane, The Bodley Head).

MANCHURIA. THE COCKPIT OF ASIA. By Colonel P. T. Etherton and H. H. Tiltman. 12s. 6d. 8vo. (Jarrolds, Ltd.).

THE SOLDIER AND THE EMPIRE. By Captain F. P. Roe. 5s. 8vo. (Gale & Polden). Presented by the Publishers.

THE DRAGON'S TEETH. By Major-General J. F. C. Fuller. 10s. 8vo. (Constable & Co.).

ELEMENTARY TACTICS. 2nd Edition. Vol. I. By Brevet Lieut.-Colonel R. P. Pakenham-Walsh. 7s. 6d. 8vo. (Sifton Praed & Co., Ltd.).

ARMS AND THE WOMAN. A CANTEEN WORKER WITH THE FRENCH. By E. V. H. S. Culling and J. B. Booth. 7s. 6d. 8vo. (John Murray). Presented by the Publisher.

ESSAYS IN PERSUASION. By J. M. Keynes, C.B. 10s. 6d. 8vo. (Macmillan & Co.).

A GUARDSMAN'S MEMORIES. By Lord Edward Gleichen. 15s. 8vo. (W. Blackwood & Sons). Presented by the Publishers.

RECOVERY. By Sir Arthur Salter. 10s. 6d. 8vo. (G. Bell & Sons, Ltd.).

GORDON AND THE SUDAN. By Bernard M. Allen. 21s. 8vo. (Macmillan & Co.).

INDIA IN REVOLT. By Major-General J. F. C. Fuller. 7s. 6d. 8vo. (Eyre & Spottiswoode).

FRANCE. By S. Huddleston. 15s. 8vo. (Ernest Benn, Ltd.).

THE EVOLUTION OF ENGLAND. By J. A. Williamson. 15s. 8vo. (Oxford University Press).

THE PRESENT STATE OF GERMANY. By J. H. Morgan. 2s. 6d. 8vo. (University of London Press).

LEAGUE OF NATIONS ARMAMENT YEAR BOOK, 1932. 7s. 6d. (Allen & Unwin, Ltd.). Presented by the League of Nations (Information Section).

EMINENT AUTHORITIES ON CHINA. By Ronald Hall. 8s. 6d. 8vo. (Allen & Unwin, Ltd.). Presented by the Publisher.

LUDENDORFF. THE TRAGEDY OF A SPECIALIST. By Karl Tschuppik. Translated by W. H. Johnston, B.A. 16s. 8vo. (Allen & Unwin, Ltd.). Presented by W. H. Johnston, Esq.

JOFFRE ET SON DESTIN. By Lieut.-Colonel H. Fabry. 8vo. (C. Lavanzelle & Co., Paris).

THE LIFE OF JON MAFSSON. Vol. II, 1618–1679. Translated by Dame Bertha Phillpotts, D.B.E. 8vo. (Hakluyt Society).

TALES FROM TURKISTAN. By Stor Lob. 6s. 8vo. (W. Blackwood & Sons). Presented by the Author.

GENERAL HERTZOG. By L. E. Neame. 18s. 8vo. (Hurst & Blackett, Ltd.). Presented by Lieut.-Colonel R. W. Hanbidge.

A SUBALTERN IN THE INDIAN MUTINY. LETTERS OF LIEUTENANT E. T. THACKERAY, BENGAL ENGINEERS. Edited by Brevet Colonel C. B. Thackeray. 8vo. Reprinted from the Royal Engineers' Journal. Presented by Colonel C. B. Thackeray, D.S.O.

MEMOIRES. Vol. III. By Prince Bulow. 25s. 8vo. (Putnam).

THE POLITICS OF NAVAL DISARMAMENT. By G. Engely. Translated by H. Rhodes. 15s. 8vo. (Williams & Norgate).

LAMBERT WICKES, SEA RAIDER AND DIPLOMAT. By W. B. Clark. 28s. 8vo. (Oxford University Press). Presented by the Publisher.

## NAVAL

SAILING SHIPS OF WAR. 1800–1860. By Sir Alan Moore, Bart. Fo. (Halton & Truscott Smith, Ltd.).

THE PRIVATE PAPERS OF JOHN EARL OF SANDWICH, FIRST LORD OF THE ADMIRALTY, 1771–1782. Vol. I. Edited for the Navy Records Society by G. R. Barnes and J. H. Owen. 8vo. (W. Clowes & Sons, Ltd.).

SCAPA FLOW. A NAVAL RETROSPECT. By Captain D. J. Munro, R.N. 12s. 6d. 8vo. (Sampson Low).

THE KONIGSBERG'S ADVENTURE. By E. Keble Chatterton. 18s. 8vo. (Hurst & Blackett).

## MILITARY

TRANSPORTING THE A.E.F. IN WESTERN EUROPE, 1917–1919. By W. J. Wilgus 98s. 8vo. (Columbia University Press, New York). Presented by the Publisher.

THE WAR ON THE ITALIAN FRONT. By Luigi Villari, M.C. 18s. 8vo. (Cobden Sanderson, Ltd.). Presented by the Publisher.

BELATED COMMENTS ON A GREAT EVENT. By Major-General H. Rowan-Robinson. 4s. 6d. 8vo. (Williams & Norgate, Ltd.). Presented by the Publisher.

THE EXAMINATION FOR ADMISSION TO THE STAFF COLLEGE. By Lieut.-Colonel A. V. T. Wakely. 3rd Edition. 2s. 6d. 8vo. (Sifton Praed & Co.).

## DIVISIONAL HISTORIES

THE HISTORY OF THE 19TH DIVISION, 1914–1918. By Everard Wyrall. 21s. 8vo. (Edward Arnold & Co.). Presented by Lieut.-General Sir George Jeffreys, K.C.V.O., C.B., C.M.G.

## REGIMENTAL HISTORIES

THE HISTORY OF THE LINCOLNSHIRE REGIMENT, 1914–1918. Edited by Major-General C. R. Simpson, C.B. 8s. 8vo. (The Medici Society, Ltd.). Presented by the Publishers.

HISTORICAL RECORD OF THE 4TH BATTALION 16TH PUNJAB REGIMENT. Edited by Captain W. R. Mole. 8vo. (Printed for private circulation by Gale & Polden). Presented by the Editor.

THE 2ND BATTALION WILTSHIRE REGIMENT, 1914–1918. By Major W. S. Shepherd. 8vo. (Gale & Polden).

# Report of Proceedings

AT THE

# Hundred and First Anniversary Meeting

TUESDAY, 8TH MARCH, 1932, AT 3.30 P.M.

---

FIELD-MARSHAL SIR CLAUD W. JACOB, G.C.B., G.C.S.I., K.C.M.G.
(*Chairman of the Council*), presiding.

---

THE SECRETARY, Captain E. Altham, C.B., R.N., reported that the notice convening the Meeting had been published in *The Times* of 23rd February, 1932, in accordance with the Bye-Law.

## ANNUAL REPORT FOR 1931

The Council have the honour to present their Annual Report for the year 1931.

### VICE-PRESIDENTS.

Field-Marshal Sir W. R. Robertson, Bart., G.C.B., G.C.M.G., G.C.V.O., D.S.O., D.C.L., LL.D., completed his term of office and was re-elected a Vice-President of the Institution.

### COUNCIL.

Rear-Admiral C. J. C. Little, C.B., has been elected a member of the Council in the place of Rear-Admiral W. F. French, C.M.G., on the latter taking up a sea-going command.

The following Members of the Council, having completed three years service, retire :—

ROYAL MARINES.

General A. G. Little, C.M.G., R.M.

ROYAL NAVAL VOLUNTEER RESERVE.

*Captain The Earl Howe, C.B.E., V.D., R.N.V.R.

REGULAR ARMY.

Major-General Sir J. E. Capper, K.C.B., K.C.V.O.

TERRITORIAL ARMY.

Colonel A. S. Bates, D.S.O., T.D.
*Colonel B. Abel Smith, D.S.O., M.C., T.D., A.D.C.

Of the above, those marked * have offered themselves for re-election. This leaves one vacancy each for the Royal Marines, Regular Army and Territorial Army.

Colonel W. W. Godfrey, C.M.G., R.M., has been nominated to fill the Royal Marine vacancy; General Sir Robert Whigham, G.C.B., K.C.M.G., D.S.O., to fill the Regular Army vacancy; and Colonel F. D. Samuel, D.S.O., T.D., to fill the Territorial Army vacancy.

### Representative Members.

The Council regret to have to record the loss of the Honorary Member representing Australia, through the death of General Sir J. Monash, K.C.B., V.D.

Major-General Sir Ivo L. B. Vesey, K.B.E., C.B., C.M.G., D.S.O., has succeeded Major-General C. Bonham-Carter, C.B., C.M.G., D.S.O., as War Office Representative on the Council.

Air Commodore F. W. Bowhill, C.M.G., D.S.O., succeeded Air Vice-Marshal C. L. Newall, C.B., C.M.G., C.B.E., A.M., and later in the year was succeeded by Air Marshal Sir E. L. Ellington, K.C.B., C.M.G., C.B.E. as Air Ministry Representative on the Council.

### Ex-Officio Members.

General Sir William Thwaites, K.C.B., K.C.M.G., has succeeded General Sir Reginald Stephens, K.C.B., C.M.G., as an ex-officio member of the Council on becoming Director-General of the Territorial Army.

### Membership.

A new list of Members was compiled and printed during the past year. In checking the old list, the names of 79 Life Members who joined before 1851 and of whom there has been no record for very many years were discovered. These have been struck off and must be allowed for when making a comparison with the previous year.

The total number of Members on the roll at the end of 1931 was 5,535 as compared with the corrected number of 5,662 for 1930.

During the past year 208 Members joined the Institution (compared with 207 in 1930); there were 178 withdrawals (as compared with 124 in 1930); 72 Life Members and 50 Annual Members died and 35 Members were struck off for being two years in arrears with their subscriptions.

The details of Members joining are as follows:—

| | |
|---|---|
| Regular Army (all arms) | 134 |
| Royal Navy | 28 |
| Indian Army | 15 |
| Royal Air Force | 12 |
| Territorial Army | 8 |
| Dominion and Colonial Forces | 4 |
| Royal Naval Reserve | 3 |
| Royal Marines | 2 |
| Royal Naval Volunteer Reserve | 1 |
| Civilian | 1 |
| | 208 |

Making allowance for the 79 Life Members struck off, the true comparison shows a decrease of 127 in actual membership as compared with 1930; of these 55 represent a financial loss.

The abnormal number of resignations which have been received during recent months is a matter for concern. The greater proportion of these are retired officers, who find themselves compelled to cut down expenses and to whom the Institution has come to seem something of a luxury.

Special efforts have been made during the year to obtain new Members, and to bring to the notice of the Services the facilities which the Institution offers, especially as regards its Journal and Lending Library. Of the 208 new Members, 73 were Junior Officers, who have taken advantage of the new Bye-Law enabling them to join without entrance fee. In 1930 the number who joined under these conditions was 56, and in 1929, when the new regulation was introduced, 15. It is to this source that we must look increasingly to keep up our membership; and it is hoped that all Members will do their utmost to impress on young officers that to them the Institution is a necessity.

## Finance.

The general financial depression has inevitably been felt by the Institution and there has been a falling off in receipts during 1931. The principal loss has been due to a decrease of £185 19s. 6d. in Museum takings.

The excess of expenditure over income on the year's working was £288 14s. 9d. But in this, the Centenary year of the Institution, it was necessary and fitting that there should be exceptional expenditure, and this amounted to over £400. All the items were most carefully scrutinized and the majority will be of lasting benefit and will not recur. They include the restoration of pictures, planing and polishing the floor of the Banqueting Hall, a new printed list of Members, the re-painting of the public stairway and entrance hall to the Museum, and the special Centenary number of the Journal.

The accounts for the Evening Reception held on the 2nd July, show that the sale of tickets to Members who attended covered all expenses except for a sum of £7 paid out of the Institution's General Account to meet the cost of invitations sent to official guests.

It is satisfactory to note that in spite of the falling off in receipts and the abnormal expenditure, the Institution has completed the year with a balance at the bank.

## Centenary Celebrations.

In its Centenary year, the Institution was honoured by a visit on the 31st March by The King and Queen. Their Majesties spent an hour inspecting the Museum, including the special Centenary Exhibitions in the Crypt and the recent improvements to the Banqueting Hall.

*Evening Reception.*—An evening reception was held on the 2nd July to celebrate the centenary of the foundation of the Institution (25th June, 1831). It was attended by H.R.H. The Duke of Connaught (President); Field-Marshal The Viscount Allenby, Marshal of the Royal Air Force Lord Trenchard, and Admiral Sir Reginald G. O. Tupper (Vice-Presidents); Field-Marshal Sir

Claud W. Jacob (Chairman of the Council), and Admiral of the Fleet Sir Roger J. B. Keyes (Vice-Chairman of the Council) ; and about six hundred Members and friends.

The Banqueting Hall, where the guests were received, was brilliantly illuminated, the effect being greatly enhanced by the newly installed flood-lighting of the Rubens ceiling.

By the courtesy of Colonel J. E. Gibbs, Commanding Coldstream Guards, music was provided throughout the evening by the string band of that Regiment, under Director of Music, Lieutenant J. C. Windrum.

*Messages of Congratulation.*—Messages of congratulation to the Institution on the attainment of its Centenary were received from the United Service Institutions of New South Wales and Victoria—Australia, and from the United States Naval Institute.

*Centenary Exhibitions.*—A special exhibition was organized in the Crypt representing a hundred years of the Navy and Army, and the development of Service aviation.

The Institution is indebted to The Lords Commissioners of the Admiralty, The War Office, The Air Ministry, The Department of Overseas Trade, Messrs. Vickers Armstrongs, Ltd., Messrs. Palmers Shipbuilding Company, The Fairey Aviation Company, Messrs. Handley Page, Ltd., Messrs. Armstrong Siddeley, Ltd., The H. G. Hawker Engineering Company, The Blackburn Aeroplane Company, the publishers of " Flight," and Mr. J. Hodgson, for exhibits, models, dioramas, and pictures specially lent for this Exhibition.

*Centenary Fund.*—This Fund was opened with a view to securing some object or objects of lasting benefit to the Institution or Museum. It was decided that the first purpose should be the acquisition of a portrait of His Majesty The King. At the close of the year a sum of £117 11s. 6d. had been received from generous donors.

*Centenary Committee.*—The thanks of the Institution are due to Major-General C. E. Corkran, C.B., C.M.G., Commanding the London District, Commander P. J. Mack, R.N., Captain H. FitzM. Stacke, M.C., and Commander C. N. Robinson, R.N., for their assistance to the Council on the special Committee formed to organize the Centenary Celebrations.

## JOURNAL.

The outside sales of the JOURNAL during the past year show a slight falling off, and amounted to £811 11s. 11d. as compared with £844 11s. 6d. in 1930. Nevertheless, this is the second highest figure on record.

With the publication of the issue for November, 1931, the existing printing contract came to an end. Tenders were called for from a number of firms and after due consideration it was decided to accept that of Messrs. J. J Keliher & Co., Ltd., who have been the Institution's printers for many years.

The contract for the advertisement pages in the JOURNAL also having terminated, further tenders were obtained for this service, and a three years' agreement was entered into with Messrs. S. Watkinson, Ltd.

Volume LXXVI of the JOURNAL, containing the four quarterly issues for 1931, is of special interest because it covers the Centenary year of the

Institution. The attention of Members is particularly invited to the Centenary number, published in May last, which contains special articles and illustrations connected with the Institution, the Banqueting Hall, and a hundred years of the fighting Services. These have been republished in booklet form and a limited number of copies are still available.

The lectures and articles have maintained the usual high standard, and those dealing with international affairs as they may affect the fighting Services have proved of special value and interest.

Every encouragement is given to young officers with new and original ideas to put their views before our readers. The Editor will gladly assist those who may be diffident about their literary ability. In the case of contributors who are serving officers, he is authorized to obtain the necessary official sanction for articles which are accepted for publication.

The Council desire to acknowledge their indebtedness to the Naval, General and Air Staffs for their co-operation in compiling the professional Notes, and their ready assistance at all times.

The thanks of the Institution are due to the various lecturers and writers who have contributed to the JOURNAL, and to the Admiral Commanding the Royal Naval War College and the Director of the Royal Naval Staff College for facilitating the reproduction of certain lectures originally delivered at those establishments.

## LIBRARY.

The number of books added to the Library during 1931 was 238, bringing the total number of books up to 27,344, together with 7,430 maps.

The Lending Library continues to be increasingly popular, and special efforts are made to supply books required by Members who are reading for Promotion and Staff College examinations.

## REPORT ON THE MUSEUM.

The Museum receipts for 1931 were £1,834 6s. 6d., which is a decrease of £185 19s. 6d. on the previous year. This is accounted for by the prevailing bad weather and sickness early in the year, and the general tendency towards economy on all forms of entertainment more recently.

On the other hand, the Special Exhibitions, and more particularly the Centenary Exhibition, have been a distinct success, and the takings for April, May, August and September are, in each case, the second best on record for those months.

The number of visitors who passed the turnstile during the year was 47,604, as compared with 52,524 in 1930. Both these figures include members of the fighting Services and Police in uniform, as well as the friends of members, parties from elementary schools, Scouts, Guides; all of whom are admitted free. They do not include approximately 600 Members and their friends who attended the Evening Reception in the Banqueting Hall.

A comparison of the "free admittance" figures is as follows:—

| | 1930 | 1931 |
|---|---|---|
| R.U.S.I. Members' Tickets .. .. .. | 204 | 259 |
| Members of the Fighting Services .. .. | 2,512 | 2,399 |
| Schools .. .. .. .. .. .. | 1,136 | 933 |
| Scouts and Guides .. .. .. .. | 844 | 958 |

## New Exhibits.

His Majesty the King has given a pair of handsome brass cannons, captured at Tel-el-Kebir and presented by Admiral Lord Alcester to H.R.H. The Prince of Wales (King Edward VII).

Her Majesty the Queen has again shown her interest in the Museum by three gracious gifts; a portrait in wax of the Duke of Wellington, a bronze box in the form of a medal containing miniature pictures of the battles of the Peninsular War, and a belt plate of the Royal Fusiliers worn prior to 1855.

The Institution is indebted to generous donors for seventy-five gifts to the Museum during the year. These include a fine sword which formerly belonged to the Emperor Napoleon I—bequeathed by Major-General Sir D. D. O'Callaghan; a Narwhal's Tusk, carried before the Kings of Oudh—presented by Mrs. Vernon Wentworth; two boards of knots, splices, bends, and hitches—made and presented by the Cadets of H.M.S. "Worcester"; and a full dress busby of the Rifle Brigade, worn prior to 1914, presented by Attendant Goodenough.

Seventy-seven additions to the Institution's collection of medals have been received, including a naval Baltic medal presented by Attendant Carpenter.

The modern side of the Museum has been steadily developed. The Army Council has presented a collection of shells now in use by the Army. These, together with the collection of naval shells and aerial bombs represent the types of ammunition in use by all three Services. Another valuable addition on the Army side is a model of the latest pontoon bridge medium type, made by the boys of the Army Technical School, Chepstow. A model of a Cierva autogiro has been presented by Colonel J. Josselyn.

# ROYAL UNITED SERVICE INSTITUTION.

## BALANCE SHEET, 31st DECEMBER, 1931.

DR. CR.

| To | £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|
| ACCUMULATED FUND— | | | | | | |
| Excess of Assets over Liabilities, as at 31st December, 1930 .. .. .. .. | | | | 88,938 | 0 | 1 |
| Additions to Museum Exhibits, etc., catalogued during the year, per contra .. .. .. | £292 | 12 | 0 | | | |
| *Less:* Withdrawals, per contra | 92 | 0 | 0 | | | |
| | | | | 200 | 12 | 0 |
| | | | | 89,138 | 12 | 1 |
| *Deduct:* Depreciation of Investments to Market Price at 31st December, 1931 .. .. | £1,544 | 18 | 3 | | | |
| Revenue Account—Balance per annexed account .. .. | 284 | 10 | 0 | | | |
| | | | | 1,829 | 8 | 3 |
| | | | | 87,309 | 3 | 10 |
| ,, SUBSCRIPTIONS, ETC., PAID IN ADVANCE | | | | 191 | 10 | 0 |
| ,, LIFE SUBSCRIPTIONS—Proportion carried forward .. .. .. .. .. | | | | 494 | 13 | 0 |
| ,, CREDITORS .. .. .. .. .. | | | | 1,004 | 11 | 3 |
| ,, MUSEUM EXHIBITS PURCHASE FUND .. | | | | 25 | 17 | 3 |
| ,, LEASEHOLD REDEMPTION FUND.. .. | | | | 3,464 | 14 | 4 |
| | | | | £92,490 | 9 | 8 |

BERTRAM ABEL SMITH, *Chairman, Finance Committee.*

E. ALTHAM, *Secretary.*

| By | £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|
| LEASEHOLD BUILDING—Whitehall, S.W.1, at Cost (covered by Insurance for £40,000) .. | | | | 23,101 | 16 | 8 |
| ,, FURNITURE, FIXTURES, FITTINGS, BOOKS, MAPS, CHARTS, etc. (as valued for Insurance at 31st December, 1926, plus additions) | | | | 10,210 | 5 | 6 |
| ,, MUSEUM EXHIBITS, etc.—(excluding Loan Collection)— | | | | | | |
| As at 31st December, 1930 .. .. | 42,320 | 5 | 6 | | | |
| Additions catalogued during the year .. | 292 | 12 | 0 | | | |
| | 42,612 | 17 | 6 | | | |
| *Deduct:* Withdrawals during the year .. | 92 | 0 | 0 | | | |
| | | | | 42,520 | 17 | 6 |
| (NOTE: The Museum Exhibits, including Loan Collection, are covered by Insurance for £59,468 12s. 6d.) | | | | | | |
| ,, INVESTMENTS at Market Price, 31st Dec., 1931— | | | | | | |
| £2,421 18s. 8d. India 3½% Stock .. .. | 1,210 | 19 | 4 | | | |
| £2,157 14s. 7d. 5% War Loan, 1929/47 .. | 2,071 | 8 | 5 | | | |
| £6,693 19s. 0d. 4% Funding Loan, 1960/90 | 5,622 | 18 | 4 | | | |
| £4,701 19s. 9d. 3½% Conversion Loan .. | 3,467 | 14 | 4 | | | |
| | | | | 12,373 | 0 | 5 |
| ,, LEASEHOLD REDEMPTION FUND— Premiums paid to 31st December, 1930, on Insurance Policies for £23,100 expiring October, 1972 .. .. .. .. .. | 3,398 | 10 | 9 | | | |
| *Add:* Premium paid during year .. .. | 66 | 3 | 7 | | | |
| | | | | 3,464 | 14 | 4 |
| ,, DEBTORS AND AMOUNTS PAID IN ADVANCE .. .. .. .. .. | | | | 364 | 17 | 7 |
| ,, CASH AT BANKERS AND IN HAND.. .. | | | | 454 | 17 | 8 |
| | | | | £92,490 | 9 | 8 |

### TO THE MEMBERS OF THE ROYAL UNITED SERVICE INSTITUTION.

We have audited the above Balance Sheet dated 31st December, 1931, and have obtained all the information and explanations we have required. In our opinion such Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the Institution's affairs according to the best of our information and the explanations given to us and as shown by the books of the Institution.

Alderman's House,
Bishopsgate, London, E.C.2.
*2nd February*, 1932.

BARTON, MAYHEW & CO., Chartered Accountants.
*Auditors.*

## REVENUE ACCOUNT FOR THE YEAR ENDED 31st DECEMBER, 1931

DR.

| | £ s. d. | £ s. d. |
|---|---|---|
| To Salaries | 2,227 14 8 | |
| „ Wages and National Insurance | 2,006 11 2 | |
| „ Attendants' Clothing | 72 1 6 | |
| „ Pensions | 112 9 0 | 4,418 16 4 |
| „ Museum Repairs, Sundries, and Special Exhibitions | 274 3 2 | |
| „ Purchase of Museum Pamphlets | 77 12 0 | 351 15 2 |
| „ Journal Printing | 1,688 1 7 | |
| „ Journal Postage | 354 11 4 | |
| „ Literary Services | 311 6 0 | |
| „ Shorthand Notes | 41 6 10 | 2,395 5 9 |
| „ Library Purchases and Binding of Books | 135 5 11 | |
| „ Periodicals and Newspapers | 53 6 2 | 188 12 1 |
| „ Advertising | 26 12 6 | |
| „ Lecture Expenses | 21 1 7 | 47 14 1 |
| „ Ground Rent | 580 0 0 | |
| „ Water Rate | 61 16 1 | |
| „ General Rates | 555 16 9 | |
| „ Insurance | 97 2 11 | 1,294 15 9 |
| „ Fuel | 135 19 6 | |
| „ Lighting | 325 19 8 | |
| „ General Repairs, etc. | 158 17 0 | |
| „ Restoration of Pictures | 99 0 9 | |
| „ Polishing Floor of Banqueting Hall | 55 0 0 | |
| „ House Expenses and Sundries | 139 16 9 | 914 13 8 |
| „ Audit Fee, 1931 | 52 10 0 | |
| „ Postages, Telegrams, etc. | 77 13 4 | |
| „ Printing and Stationery | 253 1 8 | |
| „ New Printed List of Members | 72 12 0 | |
| „ Telephone | 39 18 0 | 495 15 0 |
| „ Contribution to Staff Pension Scheme | | 155 4 5 |
| „ Leasehold Redemption Fund | | 66 3 7 |
| „ Gold Medal for R.U.S.I. Prize Essay, 1930 | | 13 16 6 |
| | | £10,342 12 4 |
| „ Balance brought down, being Excess of Expenditure over Income for the year | | 288 14 9 |
| | | £288 14 9 |

CR.

| | £ s. d. | £ s. d. |
|---|---|---|
| By Members' Subscriptions Received | 4,844 6 2 | |
| „ Voluntary Extra Subscriptions | 9 1 0 | |
| „ Life Subscriptions—Amount brought to credit | 86 16 0 | |
| „ Entrance Fees | 256 4 0 | 5,196 7 2 |
| „ Admissions to Museum | 1,834 6 6 | |
| „ Sale of Museum Catalogues and Pamphlets | 74 13 11 | 1,909 0 5 |
| „ Sales of Journal | 811 11 11 | |
| „ Advertisements in Journal | 400 0 0 | 1,211 11 11 |
| „ Profit on Repairing Regimental Colours, etc. | 36 0 4 | |
| „ Miscellaneous Receipts | 2 6 4 | 38 6 8 |
| „ Reception—Centenary Celebrations: | | |
| Receipts for Sale of Tickets | 139 10 0 | |
| Guests' Tickets—paid out of General Funds | 7 0 0 | |
| | 146 10 0 | |
| *Less:* Expenses of Reception, Printing, etc. | 144 17 9 | 1 12 3 |
| „ Rent of Lecture Theatre, etc. | | 278 1 6 |
| „ Dividends and Interest Received | | 668 17 8 |
| „ Government Grants | | 750 0 0 |
| „ Balance carried down | | 288 14 9 |
| | | £10,342 12 4 |
| By Income Tax recovered in respect of year 1930-31 | | 4 4 9 |
| „ Balance carried to Balance Sheet | | 284 10 0 |
| | | £288 14 9 |

## CHESNEY MEMORIAL MEDAL FUND.

DR. 31st DECEMBER, 1931. CR.

| | £ s. d. | £ s. d. | | £ s. d. | £ s. d. |
|---|---|---|---|---|---|
| To Balance of Fund at 31st December, 1930:— | | | By Gold Medals, 1928-30 .. .. .. .. | | 42 15 0 |
| Cash at Bankers .. .. .. .. | 56 18 9 | | ,, Depreciation of Investment to Market Price at 31st December, 1931 .. .. .. .. | | 48 6 0 |
| Investment at Market Price .. .. .. | 188 12 0 | | ,, Balance of Fund at 31st December, 1931:— | | |
| | | 245 10 9 | Cash at Bankers .. .. .. .. | 22 2 1 | |
| ,, Dividends received, less Tax .. .. .. | | 6 18 2 | Investment at Market Price: £230 Bengal & North Western Railway 3½% Preference Stock .. .. .. .. | 140 6 0 | |
| ,, Income Tax recovered in respect of year 1930-31 .. | | 1 0 2 | | | 162 8 1 |
| | | £253 9 1 | | | £253 9 1 |

We have audited the above Statement of the Chesney Memorial Medal Fund for the year ended 31st December, 1931, and certify the same to be correct.

Alderman's House,
Bishopsgate, London, E.C.2.
*2nd February*, 1932.

BARTON, MAYHEW & CO., Chartered Accountants,
*Auditors.*

## TRENCH GASCOIGNE PRIZE FUND

DR. 31st DECEMBER, 1931. CR.

| | £ s. d. | £ s. d. | | £ s. d. | £ s. d. |
|---|---|---|---|---|---|
| To Balance of Fund at 31st December, 1930:— | | | By First Prize Essay, 1930 .. .. .. .. | 31 10 0 | |
| Cash at Bankers .. .. .. .. | 66 0 6 | | ,, Second Prize Essay, 1930 .. .. .. .. | 21 0 0 | |
| Investments at Market Prices .. .. .. | 1,164 6 10 | | | | 52 10 0 |
| | | 1,230 7 4 | ,, Depreciation of Investments to Market Price at 31st December, 1931 .. .. .. .. | | 128 0 8 |
| ,, Dividends received, less Tax .. .. .. | 43 5 10 | | ,, Balance of Fund at 31st December, 1931:— | | |
| ,, ,, ,, Gross .. .. .. .. | 5 0 0 | | Cash at Bankers .. .. .. .. | 74 7 8 | |
| | | 48 5 10 | Investments at Market Prices. | | |
| ,, Income Tax received in respect of year 1930-31 .. | | 12 11 4 | £1,862 London & North Eastern Railway 3% Debenture Stock .. .. | 940 6 2 | |
| | | | £100 5% War Loan, 1929-47 .. .. | 96 0 0 | |
| | | | | | 1,110 13 10 |
| | | £1,291 4 6 | | | £1,291 4 6 |

We have audited the above Statement of the Trench Gascoigne Prize Fund for the year ended 31st December, 1931, and certify the same to be correct.

Alderman's House,
Bishopsgate, London, E.C.2.
*2nd February*, 1932.

BARTON, MAYHEW & CO., Chartered Accountants,
*Auditors.*

## BRACKENBURY MEMORIAL FUND

DR. 31st DECEMBER, 1931. CR.

| | £ s. d. | £ s. d. | | £ s. d. | £ s. d. |
|---|---|---|---|---|---|
| To Balance of Fund at 31st December, 1930— | | | By Expenditure on Books, etc. | | 15 2 4 |
| Cash at Bankers | 9 7 3 | | „ Royal United Service Institution— | | |
| Investment at Market Price | 433 13 8 | | Administration Fee | | 1 1 0 |
| | | 443 0 11 | „ Depreciation of Investment to Market Price— | | |
| „ Dividends Received, Gross | | 21 1 0 | At 31st December, 1931 | | 29 9 6 |
| | | | „ Balance of Fund at 31st December, 1931— | | |
| | | | Cash at Bankers | 14 4 11 | |
| | | | Investment at Market Price— | | |
| | | | £421 1s. 0d. 5% War Loan, 1929-47 | 404 4 2 | |
| | | | | | 418 9 1 |
| | | £464 1 11 | | | £464 1 11 |

We have audited the above Statement of the Brackenbury Memorial Fund for the year ended 31st December, 1931, and certify the same to be correct.

Alderman's House,
Bishopsgate, London, E.C.2.
*2nd February*, 1932.

BARTON, MAYHEW & CO., Chartered Accountants,
*Auditors.*

## EARDLEY-WILMOT MEDAL FUND

DR. 31st DECEMBER, 1931. CR.

| | £ s. d. | £ s. d. | | £ s. d. | £ s. d. |
|---|---|---|---|---|---|
| To Balance of Fund at 31st December, 1930— | | | By Depreciation of Investment to Market Price | | |
| Cash at Bankers | 5 0 9 | | At 31st December, 1931 | | 6 10 0 |
| Investment at Market Price | 106 0 0 | | „ Balance of Fund at 31st December, 1931— | | |
| | | 111 0 9 | Cash at Bankers | 10 0 9 | |
| „ Dividends Received, Gross | | 5 0 0 | Investment at Market Price— | | |
| | | | £100 5% Conversion Loan, 1944-64 | 99 10 0 | |
| | | | | | 109 10 9 |
| | | £116 0 9 | | | £116 0 9 |

We have audited the above Statement of the Eardley-Wilmot Medal Fund for the year ended 31st December, 1931, and certify the same to be correct.

Alderman's House,
Bishopsgate, London, E.C.2.
*2nd February*, 1932.

BARTON, MAYHEW & CO., Chartered Accountants,
*Auditors.*

## CENTENARY FUND

DR. 31st DECEMBER, 1931. CR.

| | £ s. d. | | £ s. d. |
|---|---|---|---|
| To Balance of Fund at 31st December, 1930— | | By Balance of Fund at 31st December, 1931— | |
| Cash at Bankers | 28 9 6 | Cash at Bankers | 117 11 6 |
| „ Subscriptions Received | 86 6 0 | | |
| „ Interest on Deposit Account | 2 16 0 | | |
| | £117 11 6 | | £117 11 6 |

We have audited the above Statement of the Centenary Fund for the year ended 31st December, 1931, and certify the same to be correct.

Alderman's House,
Bishopsgate, London, E.C.2.
*2nd February* 1932.

BARTON, MAYHEW & CO., Chartered Accountants,
*Auditors.*

## THE CHAIRMAN'S ADDRESS.

Gentlemen, this, the Hundred and First Anniversary Meeting, may be regarded as marking the conclusion of the year in which the Institution has celebrated its Centenary.

The record of that year is one of which we may be justly proud.

To begin with, Their Majesties The King and Queen honoured the Institution by a personal visit, and their appreciation of all they saw, especially in the Museum, was obviously very real, and His Majesty's remarks on leaving were most complimentary. You will notice that their interest did not end with this visit, but that we have since received gifts from both the King and Queen.

Many of you, no doubt, attended the Reception last July, but for the benefit of those who were unable to come, and who will read the report of this Meeting, it should be recorded that the evening was in every way worthy of the occasion. The fine old Banqueting Hall, the use of which we have enjoyed by gracious permission of the Sovereign since 1895, has been the scene of many a great gathering; but it can safely be said that it never looked better than it did that night. It was particularly gratifying that our President, H.R.H. The Duke of Connaught, was able to be present.

In connection with the celebration of the Centenary of the Institution, there has been a special exhibition depicting the development of the Services during the past hundred years. It is satisfactory to know that this has proved very popular with the general public—all the more is this so at a time when the clamour for disarmament tends to make people forget all they owe to those Services, and to the men whose names are kept alive by the mementoes and personal relics which we treasure in our Museum.

On the completion of a hundred years of its existence, we can say that the Institution is as firmly established as its founders could ever have wished and hoped that it would be, while it has undoubtedly surpassed their highest expectations in the size of its premises and the scope of its work.

But times are difficult, especially for the fighting Services, and it is necessary to look ahead. During the last few months we have lost Members—a large percentage being those of long standing—to an extent which causes the Council some anxiety. New Members, particularly junior officers, are joining up well, but not in such numbers as to place the future prosperity of the Institution beyond all question. While we hope and believe that serving officers are coming to regard the Institution as essential to them for their professional advancement, there is no doubt that, under existing conditions, the majority are very loath to add in any way to their subscription list.

With a view to meeting this situation, you are going to be asked to approve a change in the Bye-Laws reducing the entrance fee by half, and further to authorise the Council to suspend it altogether for a year. It is hoped that this step will go far to remove the initial expense which, it is felt, is a bar to very many officers who would otherwise enjoy the facilities the Institution offers. If you agree to this action, it will be of great service if every member will make it his business to make the new conditions as widely known as possible, and endeavour to enrol new recruits.

The Annual Report and Accounts have been circulated. Are there any questions to be asked on the various sections?

(No questions were asked).

I propose :—

"That the Report and Accounts as circulated be taken as read and adopted."

COLONEL B. ABEL SMITH, D.S.O., M.C., T.D., A.D.C. (Chairman of the Finance Committee) : I have much pleasure in seconding that.

The motion was then put and carried unanimously.

## RE-ELECTION OF AUDITORS.

COLONEL H. C. WYLLY, C.B. : I beg to propose :—

"That Messrs. Barton, Mayhew & Co. be re-elected as Auditors for the ensuing year at a fee of 50 guineas."

COMMANDER E. L. LOWDELL, R.N. : I beg to second that resolution.

The resolution was carried unanimously.

## ALTERATION OF BYE-LAW TO REDUCE ENTRANCE FEE AND RESOLUTION TO SUSPEND IT UNTIL END OF 1932.

THE CHAIRMAN : The next resolution, which I will ask Colonel Josselyn to move, has reference to what I said just now about the alteration of the Bye-Laws—that the annual member's entrance fee be reduced by half, that is from 2 guineas to 1 guinea, and that it be suspended this year until 31st December.

COLONEL J. JOSSELYN, C.M.G., D.S.O., O.B.E., T.D. : This resolution is in two parts—the first more or less of a permanent nature, and the second only applicable to the current year.

In 1926 the entrance fee was raised from one guinea to two guineas in order to clear off a deficit in the previous year's Accounts. The economic situation at that time was not so bad as it is now, and it was thought to be justifiable, in order to clear off that balance, to raise the entrance fee, and at the same time it was thought that the raising of it would not check the influx of members. As a matter of fact, the influx of members is being checked at the moment, and has been checked during the last year or so. Times, of course, are entirely different, and the Council have come to the conclusion not only that it would be fair to restore the entrance fee to what it was before 1926, but also that it would help officers of all the Services to become members where perhaps the higher entrance fee now prevents them from doing so. So much for the alteration of the Bye-Law.

Further, in order to facilitate, as the Chairman has said, officers joining during the current year, and so to increase the membership, the Council propose to suspend entirely the entrance fee for the current year—that is to say, from this date to the 31st December, 1932.

The resolution has been posted, and due notice has been given according to the Bye-Laws. I therefore move formally :—

"That the entrance fee be reduced from 2 guineas to 1 guinea, which necessitates an alteration of Bye-Law, Chap. II, para. 5," and

"That notwithstanding the above, and as a special measure to facilitate officers joining the Institution under present conditions of economic stress, this Meeting authorises the Council to suspend

the entrance fee entirely as from to-day until 31st December, 1932; after which the amended Bye-Law shall take effect. Members joining under the foregoing conditions, will date their membership from 1st January, 1932."

MAJOR H. FITZM. STACKE, M.C.: I beg to second that motion. In the last few years I have urged several younger officers to join this Institution, and I have been invariably met with the reply "Yes, I would very much like to join, but is it expensive!" There is a kind of idea that it is an expensive thing to join, and I feel that the reduction of the entrance fee by half, and the suspension of it this year, will do a very great deal to remove that impression. I think it will be an advantage in every way.

THE CHAIRMAN: Does any member wish to make any remarks about the proposal?

If not I will put the first part of the resolution reducing the entrance fee from two guineas to one guinea.

The motion was carried unanimously.

THE CHAIRMAN: I will now put the second part with regard to suspending the entrance fee entirely from to-day until the 31st December, 1932, after which the amended Bye-Law will take effect.

The motion was carried unanimously.

## VACANCIES ON THE COUNCIL.

THE CHAIRMAN: The undermentioned Officers have been nominated as candidates for the vacancies on the Council, as follows:—

ROYAL MARINES (1 *vacancy*).
Colonel W. W. Godfrey, C.M.G., R.M.

ROYAL NAVAL VOLUNTEER RESERVE (1 *vacancy*).
Captain The Earl Howe, C.B.E., V.D., R.N.V.R.

REGULAR ARMY (1 *vacancy*).
General Sir Robert Whigham, G.C.B., K.C.M.G., D.S.O.

TERRITORIAL ARMY (2 *vacancies*).
Colonel B. Abel Smith, D.S.O., M.C., T.D., A.D.C.
Colonel F. D. Samuel, D.S.O., T.D.

I propose that they be duly elected.

The motion was carried unanimously.

## PRESENTATION OF GOLD MEDAL AND TRENCH GASCOIGNE PRIZES FOR 1931.

THE SECRETARY: I have to report that, the Council having accepted the report of the Referees on the Gold Medal Essays submitted for 1931, the sealed envelopes were opened in their presence, and it was found that Sub-Lieutenant N. McI. Kemp, R.N., was the winner of the Gold Medal and First Trench Gascoigne Prize, and that Commander R. D. Binney, R.N., was the winner of the Second Trench Gascoigne Prize.

THE CHAIRMAN: It might interest the members to know that Sub-Lieutenant Kemp is the youngest officer who has ever won the Gold Medal or the Prize (applause). The next most junior officer was Lieutenant J. F. G. Ross of Bladensburg, Coldstream Guards, to whom the Gold Medal was awarded in 1876.

Sub-Lieutenant Kemp, I have much pleasure in presenting to you the Gold Medal and First Trench Gascoigne Prize, wishing you the best of luck and hearty congratulations. (Applause).

It may interest the members to know that this is the third time that Commander Binney has won the Second Trench Gascoigne Prize. He deserves our hearty congratulations on having done so well (applause).

## VOTE OF THANKS TO THE RETIRING CHAIRMAN.

ADMIRAL OF THE FLEET SIR ROGER J. B. KEYES, BT., G.C.B., K.C.V.O., C.M.G., D.S.O., LL.D., D.C.L.: I propose: "That the thanks of the Institution be accorded to the retiring Chairman, Field-Marshal Sir Claud Jacob, for his two years' service in that office." Sir Claud Jacob was elected to the Chair at the Annual Meeting in 1930, and as it was necessary to make a change in the Vice-Chairmanship at the latter part of that year, and as the Council did not want a further change, Sir Claud acceded to their request to remain in the Chair for an extra year—the year of the Centenary. He has presided over the destinies of the Institution, and during his time very important changes have been made and very important improvements have been instituted. It is safe to say that Sir Claud vacates the Chair knowing that he leaves the Institution in a far better state than when he took office. As there is a large percentage of our members in the Indian Army, I think it must be a matter of great satisfaction to them to know that their elected representative—a very industrious representative—should have been a Chairman to whom the Institution will always owe a great debt of gratitude. I beg to propose the vote of thanks.

GENERAL SIR ROBERT WHIGHAM, G.C.B., K.C.M.G., D.S.O.: I wish to associate myself entirely with all that Sir Roger Keyes has said, and to second this resolution.

The resolution was carried with acclamation.

THE CHAIRMAN:

Gentlemen, I wish first of all to thank Sir Roger Keyes and Sir Robert Whigham, and secondly to say how much I have enjoyed being in this position. The Institution is a great favourite of mine, I am never tired of coming in to see it, and I think anybody who is elected Chairman of the Council ought to consider himself a very fortunate individual.

The work here, and the well-being of the Institution, depend entirely on the Staff. The Chairman is the figurehead. The real people who do the work are those you see sitting alongside me. I have no hesitation whatever in saying that the importance and the well-being of this Institution owe a tremendous lot to our present Secretary (applause). He has done a very great deal—far more perhaps than most of us realise, and it is owing to that that the Institution has got such a good name and that it is running so well. He is well supported by his Staff.

Gentlemen, I thank you very much for all the assistance you have given me during the past two years here, and I can only say that I hope the Institution will have the best of fortune in the future.

The Meeting then terminated.

# One Hundred Years of The Fighting Services

## 1831-1931

A Record of the Navy and Army, and of the development of Service Aviation during the past Hundred Years, also of the foundation and evolution of the Royal United Service Institution.

100 pages. Profusely Illustrated.

**Price ONE SHILLING**

Post free in the United Kingdom.

*Re-published from the Centenary Number of the R.U.S.I. Journal.*

*Obtainable from*

**THE ROYAL UNITED SERVICE INSTITUTION**

**WHITEHALL, LONDON, S.W.1.**



*NOW READY.*

THE

# CAVALRY JOURNAL

Published under the authority of the Army Council, under the direction of Field-Marshal the Viscount ALLENBY, G.C.B., etc. (Colonel Life Guards and 16th/5th Lancers), assisted by Lieut.-General Lord BADEN-POWELL, G.C.B., G.C.V.O., etc. (Colonel 13th/18th Hussars), Lieut.-General Sir P. W. CHETWODE, Bt., K.C.B., K.C.M.G. D.S.O., Colonel A. E. W. HARMAN, C.B., D.S.O., A.D.C., Lieut.-Colonel Sir A. LEETHAM, Knt., K.C.V.O., etc. and Major-General T. T. PITMAN, C.B., C.M.G. (Managing Editor).

**PUBLISHED QUARTERLY, Price 5s. net.**

**No. 84. APRIL, 1932.**

CONTENTS.


A Picquet, 1856. (*Frontispiece*). Exploits of the Eighth Hussars. (*Illustrated*). By J. Paine. The Cavalry in France, March-April, 1918. (*Maps.*) By Major T. Preston, M.C., T.D., Yorkshire Hussars. The Balti Girl. (*Illustrated.*) By Major G. T. Williams. Lake and Victory. The Armies. By Colonel E. B. Maunsell, *p.s.c.*, late 14th P.W.O. Scinde Horse. A Week-End Fishing Trip. (*Illustrated.*) By Wegh. Cavalry Battle Honours. Part III. (*Map.*) By Major T. J. Edwards, M.B.E., F.R.Hist.S. Riding before Breakfast. (*Illustrated.*) By Lieut.-Colonel Sidney G. Goldschmidt. The Tragedy. By Multani. Fishguard, 1797. (*Illustrated.*) By K. R. Wilson. Old Cavalry Stations. Woolwich. By Lieut.-Colonel B. G. Baker, D.S.O., F.R.G.S., F.R.Hist.S. Sport in South Persia. (*Illustrated.*) By Lieut.-Colonel F. A. Hamilton, late 3rd Cavalry, I.A. "The Great Bear Lake Patrol." (*Map.*) By Inspector C. D. LaNauze, R.C.M.P. The Rurales of Mexico. (*Illustrated.*) By Percy Cross Standing. Chivalry. By Captain E. W. Sheppard, O.B.E., M.C., Royal Tank Corps. Notes. Home and Dominion Magazines. Foreign Magazines. Recent Publications. Sporting News—India. Sporting News—Canada. (*Illustrated.*)


All SUBSCRIPTIONS should be sent to, and all copies obtained direct from,

The Royal United Service Institution, Whitehall, London, S.W.1.

J. J. KELIHER & CO., LTD.
(The Marshalsea Press)
207 BOROUGH HIGH ST.,
SOUTHWARK, S.E.1.

"The R.U.S.I. Journal" is published on the 15th day of February, May, August and November of *each* year.

Registered for Transmission to Canada by Canadian Magazine Post.